CHINA'S ENERGY STRATEGY

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The Case of North Africa

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CHINA'S ENERGY STRATEGY

The Case of North Africa

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INTRODUCTION TO THE CHINA*MED* PROJECT

The wider Mediterranean is a vast region that stretches from the Iranian Plateau to the Strait of Gibraltar, from the Alps to the Horn of Africa. It is an area characterized by longterm trends, but it is also the epicenter of centrifugal forces that connect Europe, Africa, and Asia. Our research team at ChinaMed Project analyses how the dynamics of this region intersect with one of the most consequential macro-trends of this century: the transition of China, with its 1.4 billion people, from the periphery to the center of the international system.

Our research platform's mission is to track and investigate how China's presence in the region is changing the balance of power on the ground in a nuanced, yet incremental fashion. We achieve this by collecting data and creating indicators that analyze China's growing economic, commercial, and security ties with the countries of the wider Mediterranean, which we make publicly available at ChinaMed Data.

Moreover, we publish the ChinaMed Observer, sharp and focused analyses of the media discourses in China and the countries of the wider Mediterranean region on the most recent events and the most pressing trends in Sino-Mediterranean relations.

We also actively engage with and participate in the expanding connections between China and the wider Mediterranean through a range of academic initiatives including: the China Management & Business Program, scientific publications, and academic events. The ChinaMed Project, a part of the TOChina Hub developed by the University of Turin and promoted by the Torino World Affairs Institute, carries out these initiatives and its research through its partnerships such as those with the HH Sheikh Nasser al-Mohammad al-Sabah Programme at Durham University, the China-Global South Project, and the Asian Studies Unit of the Research Department of the King Faisal Center for Research and Islamic Studies. ChinaMed also enjoys the support of the Italian Ministry of Foreign Affairs and Fondazione CRT, one of Italy's largest charitable foundations.

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It is a pleasure to express our gratitude for the support provided to our project – in accordance with Article 23 bis of the Decree of the President of the Italian Republic 18/1967 – to the Unit for Analysis, Policy Planning, Statistics and Historical Documentation of the Directorate General for Public and Cultural Diplomacy of the Italian Ministry of Foreign Affairs and International Cooperation, its brilliant head Counsellor Giuliana Del Papa, and her valuable team. It goes without saying that the views expressed in this report are solely those of the authors and do not necessarily reflect the views of the Ministry of Foreign Affairs and International Cooperation.

EXECUTIVE SUMMARY

China's role in North Africa's energy sector is undergoing a transformation. Once primarily focused on oil imports, Beijing is now expanding its engagement to include a growing emphasis on green energy. This shift reflects both China's domestic pivot toward renewables and North Africa's urgent need for energy diversification and climate resilience.

Since the 1990s, China's energy policy has evolved dramatically. After becoming a net oil importer in 1993, the country began investing heavily in foreign energy partnerships. Domestically, China has moved from a dependency on coal toward a more diversified energy mix, underpinned by major legal and institutional reforms, rapid technological advancements, and a drive to lead in global renewable markets, especially in wind, solar, and hydropower. As China's oil demand levels off, its international energy strategy increasingly prioritizes clean energy cooperation.

In North Africa, although China's overall energy footprint remains smaller than that of Europe, its presence is steadily expanding, particularly in countries with clear energy transition strategies and conducive investment environments. In Egypt, Chinese firms are leading major solar and wind energy projects. In Morocco and Tunisia, partnerships in renewable energy and green technology manufacturing signal strategic alignment with national decarbonization goals. By contrast, Algeria and Libya, despite their vast energy potential, present more challenging environments due to governance issues, opaque regulatory systems, and political instability. In these contexts, Chinese companies have adopted a cautious, selective approach, engaging in limited fossil fuel and renewable ventures while avoiding large-scale commitments. Overall, China's engagement in North Africa is nuanced and varies significantly across the region. Its approach is shaped by each country's institutional capacity and political risk profile. For deeper cooperation to materialize, North African governments will need to ensure transparent regulations, predictable investment frameworks, and credible clean energy transition plans, conditions under which China is more likely to expand its role significantly.

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Introduction

Over the past two decades, China's presence in Africa has expanded significantly, evolving from limited engagement to comprehensive and multifaceted partnerships across the continent. While trade volumes and Chinese investments have grown steadily in various sectors, the energy relationship between China and North African countries remains comparatively underdeveloped. Historically rooted in fossil fuel cooperation, these ties are now gradually shifting and expanding to include various forms of engagement in the renewable energy sector, reflecting broader global trends and domestic policy shifts in both China and North Africa.

Against this background, this report seeks to explore the evolving dynamics of this relationship by examining the energy strategies pursued by China and North African states. The first section explores the evolution of China's energy strategy and its intersection with foreign policy objectives. The second section provides an outline of the North African energy landscape and China's current role within it. Then, the third section examines the specific trends in China's energy engagement with Egypt, Algeria, Libya, Tunisia and Morocco. Finally, the fourth section summarizes the main findings, highlighting possible future developments alongside the challenges and opportunities facing the actors involved.

The Evolution of China's Energy Strategy

China's energy strategy has undergone profound transformations over recent decades. Until the early 1990s, the country enjoyed a high degree of self-reliance in crude oil production, benefiting from the discovery of large domestic oil fields in the late 1950s. However, the premature depletion of these reserves forced China to rethink its approach to energy security. This section analyzes how China responded to the oil price shock of the early 1990s and explores the strategies the country has adopted since then. In particular, it examines the role played by refineries in the crude oil sector, as well as the development of Beijing's renewable energy policies and their surrounding legal framework.

The origins of China's modern petroleum industry date back to the 1950s, when Beijing launched initiatives to locate domestic oilfields. In 1959, China discovered the Daqing Oil Field, the country's largest oil deposit, followed soon after by other major finds such as the Shengli and Dagang fields. These discoveries enabled China to achieve its goal of self-sufficiency in oil production, and by the 1970s, Beijing gradually started exporting oil to countries like Japan, North Korea and Vietnam.[1] Since China's domestic production consisted mainly of sweet (i.e., low-sulfur) crude oil, the state invested in refining infrastructure designed specifically to process solely this type of oil. Another reason contributing to this focus was technological: following the Sino-Soviet split and the departure of Soviet experts from China, local engineers lacked the knowledge necessary to process sour (i.e., high-sulfur) crude oil.

While this limitation did not pose an immediate constraint, it became increasingly problematic as China's economy boomed in the 1980s. By 1993, domestic oil production could no longer meet rapidly rising demand, with China becoming a net importer.

Initially, the Chinese government viewed crude oil imports as a temporary measure while initiatives were being launched to find new domestic reserves. Confident in these efforts, policymakers showed little interest in building new refineries, especially those capable of processing sour crude oil. As a result, Chinese imports during this period mostly consisted of sweet crude. At the same time, the newly reformed national oil companies (NOCs), especially Sinopec, CNOOC and China National Petroleum Corporation (CNPC), began actively seeking alternatives abroad, focusing on countries that produce sweet crude. Notably, these initiatives predated Jiang Zemin's *Going Global* strategy. It could even be argued that the NOCs were the true pioneers of this outward-looking approach, with the central government merely formalizing a strategy that was already taking shape on the ground.

It soon became clear that foreign oil imports would become a "new normal," as domestic demand for crude oil and petroleum products continued to surge while no major new fields were discovered.[2] This realization led to a major reorientation of Beijing's approach to the NOCs. Although the central leadership initially resisted allowing the NOCs to upgrade their refineries to process sour crude in the 1990s, it eventually recognized the necessity of such investments as well as diversifying suppliers.[3] The widening price between sweet and sour crude further led Beijing to recognize the urgency of such investments, despite upgrading and building refineries being an expensive and long process.

As a result of this increased processing capacity, China surpassed the United States in the 2000s to become the world's largest energy consumer. This was driven not only by oil imports from its traditional suppliers such as Libya, Sudan, Angola and Oman but also a rapid expansion in the imports of cheaper sour crude from countries like Iran and Saudi Arabia, as shown in Figures 1 and 2.[4] This shift is reflected in the changing composition of China's crude imports: in 2005, the ratio of sweet to sour crude stood at 74% to 26%, while by 2015, the balance had shifted to 44% sweet and 56% sour.

Over the past decade, China's crude oil import patterns have continued to evolve. According to the Center on Global Energy Policy at Columbia University,[5] by 2015, the Middle East rose to account for approximately 50% of China's oil

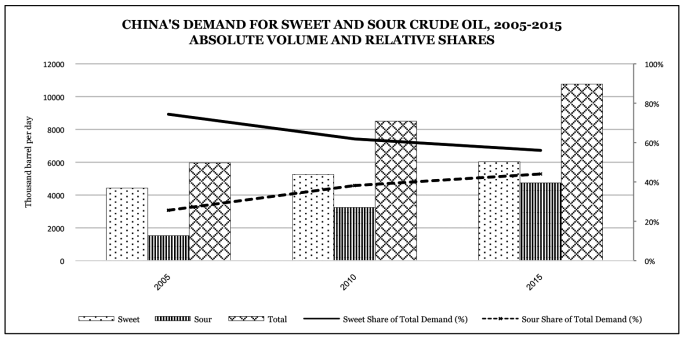
[1] Per Högselius, "The Saudi Arabia of the Far East? China's rise and fall as an oil exporter," *The Extractive Industries and Society* 2, no. 3 (2015): 411-418. https://doi.org/10.1016/j.exis.2015.04.004.

[2] Inwook Kim, "Refining the Prize: Chinese Oil Refineries and Its Energy Security," *Pacific Review* 29, no. 3 (2016): 361–86. https://doi.org/10.1080/09512748.2015.1022584.

[3] Ibid.

[4] Ibid.

[5] Christophe de Gouvello (co-ord.), Noureddine Berrah (main auth.), Yanqin Song, et al., "Renewable Energy Development in China: A 40-Year China-World Bank Partnership," The World Bank, 2021, https://documents.worldbank.org/pt/publication/documents-reports/documentdetail/162841638508597254/renewable-energy-development-in-china-a-40-year-china-world-bank-partnership.



Source: IHS Markit

total imports, a proportion that has since remained relatively stable (however, accurately estimating the origin of China's oil imports is challenging due to Iranian imports not being officially declared). In contrast, imports from Africa dropped from 19.2% in 2015 to 8.8% in 2024. This decline is primarily due to decreased oil extraction and exports from Angola, Sudan and South Sudan. As of 2024, Russia has emerged as China's biggest crude oil supplier, accounting for 20% of total imports, followed by Saudi Arabia (14%), Malaysia (13%), Iraq (11%) and Oman (7%).[6]

At present, China stands on the cusp of a major transition that is likely to have profound and lasting effects on its energy strategy and foreign policy. Between 2003 and 2023, China's oil demand grew at an average annual rate of 5.8%.[7] However, projections for 2024 estimate oil demand growth between -1.6% and 2%, with a similar decline expected in 2025.[8] In December 2024, Sinopec announced that China's oil consumption is set to peak by 2027.

One of the key factors behind this change is the development of China's renewable energy sector and the electrification of its economy. For example, China's total electric vehicle fleet has already displaced over one million barrels per day of implied oil demand, an amount roughly equivalent to Oman's daily oil production. This figure is expected to rise by an additional 600,000 barrels per day over the next year.[9]

China's current energy trajectory is the result of a long journey that can be broadly divided into four major phases.[10] The first phase, lasting up to 1993, was characterized by a persistent imbalance between energy demand and supply, driven by the rapid economic growth following the introduction of economic reforms in the late 1970s. This period saw a heavy reliance on coal, leading to severe environmental issues such as high levels of pollution and widespread deforestation.[11] To address the issue of power shortages in rural areas, the government implemented a decentralized, small-scale renewable energy system comprising mainly of small hydropower projects, biogas, efficient stoves and solar water heaters. Wind and photovoltaic technologies also played a minor role in this early stage.

Although hydropower capacity expanded significantly during this period, its share of total installed generation capacity declined from 31% in 1980 to 24% in 1994 due to the rapid growth in fossil fuel-based generation. However, through foreign investments, particularly the Lubuge Hydropower Project in Yunnan province, China gained expertise in modern project management practices and engineering, paving the way for future large-scale hydropower projects.[13]

The second phase began in 1994 with the adoption of China's *Agenda 21*,[14] which, for the first time, identified renewable energy as an independent energy sub-sector, as well as a key pillar of China's development strategy.[15] This marked a turning point in China's energy strategy, based also on a growing awareness of the need to improve efficiency across the energy sector. For instance, although the developing wind power industry experienced growth in terms of both energy production and installation, Chinese wind farms underperformed compared to those built by international manufacturers. In response, Beijing introduced new market-based policies and further opened the sector to both domestic and foreign investors.

Beyond the wind industry, there was broad consensus that China lacked an adequate legal framework for renewable energy, and that existing laws and regulations were poorly implemented and scarcely respected. This led to the development of a new legal and regulatory framework. Notably, in the mid-90s, the government launched the Renewable Energy Development Project (REDP), widely considered as the catalyst for photovoltaic development in China.[16] The REDP reinforced the country's commitment to renewable energy and paved the way for the China Renewable Energy Scale-up Program (CRESP), whose first phase, initiated in the 2000s, consisted in creating a legal, regulatory, and policy framework for scaling up renewable energy development.

To sum up, the key distinctions between the pre- and post-1994 periods are the transition from a planned to market-based economy, the creation of a legal framework able to support the growth of the renewable energy sector within that market-based system, and a shift in focus from addressing rural needs to aligning renewable energy development with broader development priorities.[17]

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[6] Erica Downs, "China's Oil Demand, Imports and Supply Security," Center on Global Energy Policy, April 30, 2025, https://www.energypolicy.columbia.edu/publications/chinas-oil-demand-imports-and-supply-security/.

[7] Ibid.

[8] Ibid.

[9] Roger Quinn, "Electric Trucks and the Future of Chinese Oil Demand," Rhodium Group. July 1, 2025, https://rhg.com/research/electric-trucks-and-the-future-of-chinese-oil-demand/.

[10] See note 5, The World Bank, 2021.

[11] Ibid.

[12] Ibid.

[13] Ibid.

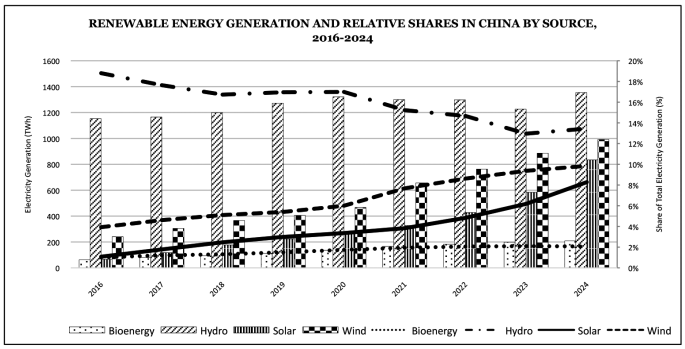
[14] Ministry of Ecology and Environment – The People's Republic of China, "China's Agenda 21: from Strategy to Action," October 3, 1997, http://www.cciced.net/ccicedPhoneEN/Events/AGMeeting/1997_4009/meetingplace_4010/201609/t20160922_89428.html.

[15] See note 5, The World Bank, 2021.

[16] The World Bank, "China - Renewable Energy Development Project," Project Performance Assessment Report No. 54860, June 1, 2010, https://documents.worldbank.org/en/publication/documents-reports/documentdetail/151251468023956810/china-renewable-energy-development-project.

[17] See note 5, The World Bank, 2021.

These institutional and policy shifts, together with the enactment of the Renewable Energy Law (REL) in 2005 (amended in 2009), marked the beginning of the third stage (2005-2017). During this stage, the share of renewables in the national energy mix expanded steadily, competing with coal for dominance. Hydropower continued to lead, followed by wind and solar photovoltaic, and to a lesser extent, biomass and geothermal energy.[18] This period also saw the globalization of China's renewable energy industry. Indeed, the expansion of the Chinese renewable industry helped lower international unitary costs, making renewable technologies more affordable for other developing countries. By the 2010s, China had become the global leader in solar photovoltaic supply chains.



Source: Ember - Yearly Electricity Data (2025)

The fourth and current stage began in 2018 with China's National Energy Administration issuing the *Notice on Matters Related to Photovoltaic Power Generation*.[19] This initiated a new era for China's renewable energy development, characterized by the scaling back of subsidies, greater reliance on market-oriented trends, and improved efficiency in wind and photovoltaic capacity.[20] These measures spurred further growth. Following the approval of the renewable energy-focused 13th Five-Year Plan (2016-2020), which set ambitious targets, China's wind power generation increased by over 300% between 2016 and 2024, reaching 991.60 TWh[21]. During the same period, China's solar output similarly surged from 66.53 TWh to 834.10 TWh.[22] According to a 2024 report by the International Hydropower Association, China also maintained its global lead in the hydropower sector, with a total installed capacity of 412,540 MW in 2023, accounting for nearly 29% of the world's total.[23] Hydropower remains China's largest source of clean electricity, contributing 13% to the national power supply in 2024.[24] Given projections of increased rainfall in the coming years,[25] China's hydropower capacity is expected to increase, further supporting the country's efforts to peak its greenhouse gas emissions.

Beijing's push for renewable energy has also been integrated into its foreign policy, including its engagement with North Africa and the Middle East. This approach was formalized with the "1+2+3" cooperation model, proposed in the 2016 *Arab Policy Paper*, published by the State Council and the Ministry of Foreign Affairs.[26] This framework identifies energy, both traditional and renewable sources, as a pillar of China-Arab relations. It was designed to diversify China's energy partnerships and enhance its energy security, but also to support the green transition in the region, securing space for Chinese firms and technology. This renewable energy-focused policy built upon earlier measures, for example, the People's Bank of China's 2016 *Guidelines for Establishing the Green Financial System*, which encouraged enterprises to increase investments in the green energy sector, both at home and abroad.[27]

As a result, China has become increasingly involved in renewable energy projects across the region, where countries such as Morocco, Egypt and Jordan are emerging as driving forces in the regional transition toward clean energy. A notable example is China's 2019 acquisition of a 49% stake in ACWA Power, a leading Saudi Arabian energy company, through the Silk Road Fund. This strategic investment also gave China a stake in major projects like the Noor Solar Power Station in Morocco, the world's largest concentrated solar power plant.
To conclude, China's energy strategy has undergone a profound transformation, shaped by both changing economic needs, such as those following the economic reforms of the 1980s, and strategic shifts toward renewable energy and electrification. Inevitably, these changes have also shaped Beijing's foreign policy priorities, including its growing engagement with North Africa.

North Africa's Energy Landscape and China's Role

While the previous section focused on the evolution of China's energy policy and its implications for foreign policy, this section turns to the North African energy landscape and China's growing involvement.

North Africa is characterized by a highly diverse energy landscape. Some countries, such as Algeria and Libya, are major producers and exporters of hydrocarbons. Others, like

[18] Ibid.

[19] National Development and Reform Commission, "Guānyú 2018 nián guāngfú fādiàn yǒuguān shìxiàng de tōngzhī (fā gǎi néngyuán〔2018〕823 hào)" 关于2018年光伏发电有关事项的通知(发改能源〔2018〕823号) [Notice on matters related to PV power generation in 2018], October 9, 2018, https://www.ndrc.gov.cn/xxgk/zcfb/tz/201806/t20180601_962736.html.

[20] See note 5, The World Bank, 2021.

[21] Our World in Data, "Electricity generation from wind power – China," Ember (2025), Energy Institute - Statistical Review of World Energy (2025), Accessed July 5, 2025, https://ourworldindata.org/grapher/wind-generation?tab=chart&country=~CHN.

[22] Ibid.

[23] International Hydropower Association, "2024 World Hydropower Outlook," June 12, 2024, https://www.hydropower.org/publications/2024-world-hydropower-outlook.

[24] Muyi Yang and Siyao Zhang, "China," Ember - Energy Trends, Last updated April 9, 2025, Accessed July 5, 2025, https://ember-energy.org/countries-and-regions/china/.

[25] Matthew Zeitlin, "Hydropower is Surging in China," *Heatmap*, July 8, 2024, https://heatmap.news/economy/china-floods-hydropower.

[26] The State Council – The People's Republic of China. "China's Arab Policy Paper," January 13, 2016, https://english.www.gov.cn/archive/publications/2016/01/13/content_281475271412746.htm.

[27] The People's Bank of China, "Guidelines for Establishing the Green Financial System," August 31, 2016, http://www.pbc.gov.cn/english/130721/3133045/index.html.

Morocco and Tunisia, rely heavily on energy imports to meet domestic demand.[28] Meanwhile, countries such as Egypt have transitioned from being energy exporters to net importers due to rising consumption and the absence of significant crude oil discoveries in recent years.[29]

This energy context exists alongside a high vulnerability to climate change, which is increasingly seen as a contributing factor to regional instability and conflict.[30] However, North Africa also has excellent potential for renewable energy development, especially solar energy. A transition toward green energy could attract foreign investment and generate employment opportunities, including in hydrocarbon-rich countries.[31]

Most North African countries have set ambitious targets to increase the share of renewables in their overall energy mix. However, progress toward these goals varies significantly across the region.

Among these states, Morocco stands out as the most ambitious. In 2009, the country adopted the National Energy Strategy, aiming to increase the contribution of renewables, including hydropower, wind and solar, to 42% of installed capacity by 2020 and 52% by 2030.[32] While the 2020 target was missed by 4.9%, Morocco remains on track to meet its 2030 goal.[33] As of 2022, wind accounted for 71.6% of Morocco's renewable electricity generation, followed by solar thermal at 11.5%, and hydropower at 9.1%.[34]

Algeria also launched a significant renewable energy development program for the 2015-2030 period, with a target of achieving a 37% share (22 GW) of renewable energy in power capacity by 2030.[35] Nevertheless, by 2020, renewables accounted for only 0.7% of total power generation.[36] Regarding Libya, a 2010 target aimed for renewables to cover 10% of electricity demand by 2025. However, this objective was significantly compromised in the aftermath of the 2011 uprising.[37]

In Tunisia, a net energy importer that would benefit from an increase of domestic clean energy production, the renewable sector remains significatively underdeveloped. According to an August 2024 report, electricity production from solar energy reached only 3.26%, while wind and hydropower contributed just 1.7% and 0.09%, respectively.[38] These figures suggest that the country is far from meeting the targets outlined in the 2015 revised *Tunisian Solar Plan*, which set the goal of increasing renewable energy's share from 3% in 2016 to 30% in 2030.[39] The Plan envisions that 46% of new renewable energy will come from wind, 39.6% from solar photovoltaic, 11.8% from concentrated solar power, and 2.6% from biomass.[40]

Egypt, aiming to boost its renewable energy sector, launched an *Integrated Sustainable Energy Strategy* (ISES-2035) in 2016. This strategy focuses on developing renewable energy and energy efficiency, with the aim of satisfying 42% of electricity demand through renewable sources by 2035.[41] Currently, hydropower accounts for 9% of energy consumption (90% of which is

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[28] International Energy Agency (IEA), "Clean Energy Transitions in North Africa," September 2020: 19, https://www.iea.org/reports/clean-energy-transitions-in-north-africa.

[29] Nikolaus Supersberger and Laura Führer, "Integration of Renewable Energies and Nuclear Power into North African Energy Systems: An Analysis of Energy Import and Export Effects." Energy Policy, At the Crossroads: Pathways of Renewable and Nuclear Energy Policy in North Africa, vol. 39, no. 8 (2011): 4458. https://doi.org/10.1016/j.enpol.2010.12.046;
U.S. Energy Information Administration (EIA), "Egypt," Last updated August 13, 2024, Accessed July 5, 2025, https://www.eia.gov/international/analysis/country/egy.

[30] See note 28, IEA, September 2020; In Libya fossil fuels account for almost all the national energy's demand. In Algeria, natural gas and crude oil account for 95% of domestic energy production. In Egypt's current energy structure, 88 percent of Egypt's energy consumption comes from oil and natural gas, while Tunisia mostly relies on natural gas. In Morocco, in 2023 the total energy supply was composed of coal for the 31.7%, oil for 58% and biofuels and waste for 5.6%.
Robin Mills, "A Fine Balance: The Geopolitics of the Global Energy Transition in MENA," In *The Geopolitics of the Global Energy Transition*, edited by Manfred Hafner and Simone Tagliapietra. Springer International Publishing, 2020: 115. https://doi.org/10.1007/978-3-030-39066-2_6.

[31] Ibid.

[32] Fatima Zahra Ainou, Mohsin Ali, and Muhammad Sadiq, "Green Energy Security Assessment in Morocco: Green Finance as a Step toward Sustainable Energy Transition," *Environmental Science and Pollution Research* 30, no. 22 (2023): 61411–29. https://doi.org/10.1007/s11356-022-19153-7.

[33] Khadidja Sakhraoui, Redha Agadi, Christian von Hirschhausen, and Güvenc Sarper Ege, "Energy Policy in Morocco: Analysis of the National Energy Strategy's Impact on Sustainable Energy Supply and Transformation," *Next Research* 1, no. 2 (2024): 100072. https://doi.org/10.1016/j.nexres.2024.100072.

[34] Ibid.

[35] Cecilia Camporeale, Roberto Del Ciello, and Mario Jorizzo, "Beyond the Hydrocarbon Economy: The Case of Algeria" In *Sustainable Energy Investment - Technical, Market and Policy Innovations to Address Risk.* edited by Joseph Nyangon and John Byrne. IntechOpen, 2021. https://doi.org/10.5772/intechopen.91033.

[36] U.S. Energy Information Administration (EIA), "Algeria," Last updated June 5, 2023, Accessed July 5, 2025, https://www.eia.gov/international/overview/country/dza.

[37] Mohamed Almaktar, and Mohamed Shaaban, "Prospects of Renewable Energy as a Non-Rivalry Energy Alternative in Libya," *Renewable and Sustainable Energy Reviews* 143 (June 2021): 110852. https://doi.org/10.1016/j.rser.2021.110852.

[38] Observatoire National de l'Energie et des Mines – Ministère de l'Industrie, des Mines et de l'Énergie – Republique Tunisienne, "Conjoncture Energétique Août 2024," August 2024, https://www.energiemines.gov.tn/fileadmin/docs-u1/Conjoncture_%C3%A9nerg%C3%A9tique_Ao%C3%BBt__2024.pdf.

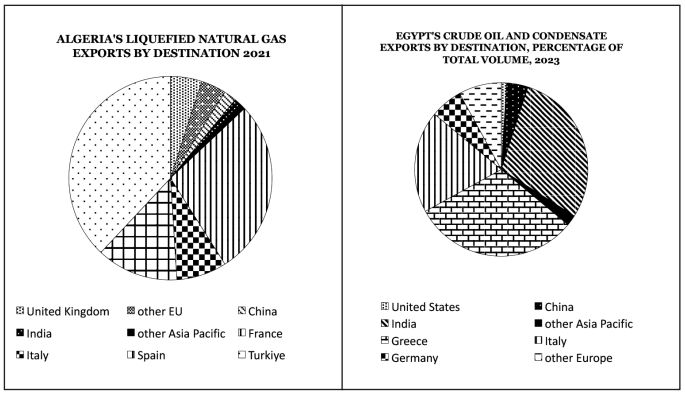
[39] Ibid.

[40] Ibid.

[41] International Renewable Energy Agency (IRENA), "Renewable Energy Outlook Egypt," October 2018, https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2018/Oct/IRENA_RE_Outlook_Egypt_2018_EN_summary.pdf;
Salma I. Salah, Mahmoud Eltaweel, and C. Abeykoon. "Towards a Sustainable Energy Future for Egypt: A Systematic Review of Renewable Energy Sources, Technologies, Challenges, and Recommendations." Cleaner Engineering and Technology 8 (June 2022): 100497. https://doi.org/10.1016/j.clet.2022.100497.

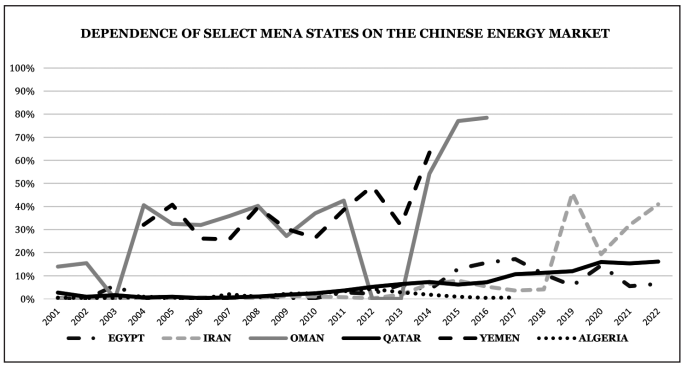
produced by the Aswan High Dam, which has a capacity of 2300 MW[42]), while wind and solar contribute approximately 2% and 1%, respectively.[43] Egypt is also attempting to position itself as a global hub in the emerging green hydrogen sector, with the ambitious target of installing 11.62 GW of hydrogen production capacity by 2035.[44]

China's presence in the North African energy landscape remains relatively limited compared to that of European countries. For example, in Algeria, as of 2021, 68% of crude oil and 96% of natural gas exports were directed toward European markets, while only 2% of liquefied natural gas went to China.[45] Similarly, in Egypt, 64% of crude oil exports went to Europe, with just 4% going to China.[46]



Source: BP's 2022 Statistical Review of World Energy

Source: Global Trade Tracker



Source: ITC Trade Map; data compiled and elaborated by ChinaMed. Also accessible via https://www.chinamed.it/chinamed-data/middle-east

These figures illustrate that Egypt's dependence on the Chinese energy market was significantly lower than that of many Middle Eastern countries. Nonetheless, China's role in the region is expected to expand with the evolving global energy transition. Despite the uneven pace in adopting clean energy technologies, North African countries have shown great interest in green energy development and are increasingly attentive to China's contributions in this field.[47]

Indeed, as explored in greater detail in the next section, several large-scale wind and solar energy projects have already been developed through joint ventures between state-owned North African companies and Chinese firms. Prominent examples of local actors include the state-owned company Société Tunisienne de l'Electricité et du Gaz (STEG), which plays a key role in policy development, supervision and maintenance of renewable projects.[48] In Algeria, the Algerian Renewable Energy Company, a joint venture involving the two largest state-owned enterprises in the country's energy sector, is, by law, a shareholder in all renewable energy projects implemented nationwide.[49] In Morocco, the 2020 *Draft Law No 40-19* has further empowered state actors in archiving national transition goals, granting local administrations the authority to participate in the planning and deployment of renewable projects and reorganize electricity market operations accordingly.[50]

When it comes to nuclear energy, China's involvement in North Africa remains limited. Although some forms of cooperation are emerging in Egypt and Algeria, they have not yet resulted in significant transfers of nuclear technology or the establishment of major nuclear projects.

The next section examines the cases of Egypt, Algeria, Libya, Tunisia, and Morocco to trace the evolution of energy relations between China and North African states, and to situate this dynamic within the broader context of the global energy transition and international partnerships.

Evolving Energy Ties between China and Key North African Countries

Egypt

Egypt has maintained a long-standing energy partnership with China, particularly in the fossil fuel sector. Although fossil fuels continue to rank among Egypt's primary exports to China, they account for only a small share of China's extensive energy needs. Consequently, the most substantial Chinese energy investments in Egypt to date have concentrated on hydrocarbons. One early example is the Egyptian Chinese Drilling Company (ECDC), established in 1998 as the first petroleum industry joint venture between

[42] Ibid.

[43] See note 29, EIA, Accessed July 5, 2025.

[44] Wei Shen and Han Chen, "China's Role in Egypt's Low-carbon Energy Transition: From Renewable Energy to Green Hydrogen," International Institute of Green Finance, April 2023: 16.

[45] See note 36, EIA, Accessed July 5, 2025.

[46] See note 29, EIA, Accessed July 5, 2025.

[47] Davide Giacomo Zoppolato and Shisong Jiang, "China-MENA Energy Cooperation under the Belt and Road Initiative: Megaprojects, Economic Planning, and a Pragmatic Approach to the 'Green' Transition," *The Journal of World Energy Law & Business* 16, no. 2 (2023): 143–59. https://doi.org/10.1093/jwelb/jwac042.

[48] Ibid.

[49] Ibid.

[50] United Nations Economic Commission for Europe (UNECE), "Environmental Performance Reviews Morocco," October 25, 2021, https://unece.org/sites/default/files/2021-08/ECE_CEP_170_En.pdf.

the two countries. Today, the ECDC is Egypt's largest private drilling contractor, operating eight internationally compliant land rigs.[51]

However, the energy relationship between the two countries has evolved in recent years. Driven by the goals of Egypt's *Integrated Sustainable Energy Strategy*, Chinese companies traditionally focused on fossil fuels, such as the CNPC, are now increasingly expanding into renewables and clean energy projects. This shift mirrors broader trends of Chinese firms pursuing sustainable investment opportunities globally.[52]

China's growing role in Egypt's renewable energy transition is evident in the development of the Benban Solar Park in Aswan, one of the largest solar energy projects in the world. Chinese companies Chint and TBEA were awarded and executed two Engineering, Procurement, and Construction (EPC) contracts, contributing a combined 350 MW, around 25% of the park's total 1,465 MW capacity.[53] Moreover, China Three Gorges Asia-Africa Green Energy Investment Limited has emerged as Benban's second-largest investor, managing five projects totaling 321 MW.[54] Covering 37 square kilometers, Benban serves as a flagship initiative in Egypt's renewable strategy and highlights the significant potential for Chinese involvement in the region's expanding solar energy capacity.

Beyond Benban, China has also participated in other Egyptian solar energy ventures. China Energy Engineering Corporation is currently developing a solar plant in northern El Gouna,[55] while CNG Egypt New Energy Glass Company, affiliated with China Glass Holding, has invested in photovoltaic glass production in the Suez Canal Economic Zone.[56] Collaboration has also extended to solar technology research: a solar energy and electricity storage research lab was established in Sohag in 2015 as part of ongoing technical cooperation between the two countries.[57]

While solar cooperation has been robust, Chinese involvement in Egypt's wind and hydropower sectors is still developing. However, several key investments have been made, particularly in wind. PowerChina, a major Chinese state-owned enterprise, signed an EPC contract with Suez Wind Energy to develop a 1.1 GW wind power project in the Red Sea Governorate.[58] This will be PowerChina's largest overseas wind project to date, featuring 138 turbines supplied by China's Envision Energy.[59] It follows PowerChina's earlier completion of a 500 MW wind power project in Ras Ghareb, completed in 2022.[60]

Despite Egypt's global hydrogen ambitions, Chinese involvement in Egypt's hydrogen market remains currently limited, though there have been notable contributions. For instance, China CEEC signed a Memorandum of Understanding in 2022 for the development of a green hydrogen project,[61] and in 2024, China Energy has signed on to a major initiative in the Suez Canal Economic Zone, as announced by Egyptian Prime Minister Madbouli.[62] Despite these developments, China faces stiff competition in the sector, notably from France, which recently secured a $7.6 billion deal with Egypt to develop a major green hydrogen and ammonia complex near Ras Shokeir on the Red Sea .[63]

Among North African countries, Egypt is the closest to constructing a nuclear power plant, thanks to a 2014 agreement with ROSATOM.[64] This Russian state corporation is behind the 4.8 GW El Dabaa plant, which began construction in 2022.[65] China's involvement in Egypt's nuclear energy sector, by contrast, is minimal. A 2015 Memorandum of Understanding between China National Nuclear Corporation (CNNC) and Egypt's Nuclear Power Plant Authority outlined potential cooperation in nuclear power projects, but there has been no significant follow-up.[66] Egypt has instead kept the door open to partnering with other countries, including South Korea.

China is also involved in Egypt's hydropower sector. In 2018, Sinohydro, a subsidiary of PowerChina, secured a contract to build a 2,400 MW pumped storage hydropower plant at Mount Attaqa, with China Eximbank financing 85% of the project. However, the viability of Egypt's hydropower capacity is increasingly uncertain due to the potential impact of the

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[51] Khaled A. El-Mattrawy, "Chinese Investment in Egypt: Towards Prospects of Mutual Interests," Information and Decision Support Center (IDSC) – The Egyptian Cabinet, October 2024: 6, https://idsc.gov.eg/upload/DocumentLibraryIssues/AttachmentA/9128/Chinese%20Investment%20in%20Egypt-%20Towards%20Prospects%20of%20Mutual%20Interests%20%20%20%20%20.pdf.

[52] Ibid., 11.

[53] See note 44, Wei Shen and Han Chen, April 2023: 11.

[54] *Xinhua*, "Chinese company helps to galvanize Egypt's clean energy development," June 20, 2024, https://english.news.cn/20240620/4fca2a0294494588ac4a707bfa17b311/c.html.

[55] See note 44, Wei Shen and Han Chen, April 2023: 11.

[56] Suez Canal Economic Zone, "With investments of $300 million SCZONE celebrating the foundation stone Ceremony for the "New Energy Glass" project in Sokhna," November 28, 2024, https://sczone.eg/with-investments-of-300-million-sczone-celebrating-the-foundation-stone-ceremony-for-the-new-energy-glass-project-in-sokhna/.

[57] See note 44, Wei Shen and Han Chen, April 2023: 12.

[58] *bne Intellinews*, "PowerChina signs EPC contract to build 1.1GW Suez Wind Project in Egypt," August 1, 2025, https://www.intellinews.com/powerchina-signs-epc-contract-to-build-1-1gw-suez-wind-project-in-egypt-360387/.

[59] Ibid.

[60] Ibid.

[61] See note 44, Wei Shen and Han Chen, April 2023: 17.

[62] The Egyptian Gazette, "PM urges China Energy to swiftly establish factories to localise renewable energy industries," September 5, 2024, https://egyptian-gazette.com/egypt/pm-urges-china-energy-to-swiftly-establish-factories-to-localise-renewable-energy-industries/.

[63] State Information Service (Egypt), "Egypt, France Sign 7 Billion Euro Deal for Green Hydrogen Facility," April 8, 2025, https://www.sis.gov.eg/Story/206977/Egypt%2C-France-sign-7-billion-euro-agreement-to-build-green-hydrogen-plant-in-Ras-Shoukair.

[64] Heba Taha, "Nuclear Revival in North Africa? Developments in Algeria, Libya, and Egypt," South African Institute of International Affairs, May 20, 2021, https://saiia.org.za/research/nuclear-revival-in-north-africa-developments-in-algeria-libya-and-egypt/.

[65] Enerdata, "Russia's Rosatom starts construction on El-Dabaa nuclear plant Unit 4 (Egypt)" January 25, 2024, https://www.enerdata.net/publications/daily-energy-news/russias-rosatom-starts-construction-el-dabaa-nuclear-plant-unit-4-egypt.html.

[66] China National Nuclear Corp, "CNNC signs MOU with Egyptian nuclear power plant authority," May 29, 2015, https://en.cnnc.com.cn/2015-05/29/c_1022848.htm.

Grand Ethiopian Renaissance Dam (GERD), which may reduce the Nile River's inflow to Egypt.[67] This adds a layer of complexity to Sino-Egyptian energy relations, given Beijing's role as a key financier and equipment supplier for the dam. While a point of contention in Sino-Egyptian diplomatic ties, the GERD has so far not seriously disrupted bilateral relations.[68]

In conclusion, China has become a key player in Egypt's energy transition, with notable investments in a variety of renewable energy projects while maintaining a strong presence in hydrocarbons. However, although Chinese companies play a growing role, they are neither the sole nor necessarily the preferred partners for Egypt in its energy diversification efforts. This is particularly evident in the nuclear and hydrogen sectors. Additionally, China's involvement in the GERD project presents a potential obstacle to deeper energy cooperation with Egypt in the years ahead.

Algeria

While European firms maintain a strong presence in Algeria's energy sector, largely due to their deep-rooted historical and commercial ties, major Chinese NOCs such as Sinopec, CNOOC and CNPC have succeeded in establishing a foothold in the country.[69] These companies have invested in strategic oil exploration projects and contributed to the construction of vital refining infrastructure, including the facilities in Adrar and Skikda. One of the most prominent examples of Sino-Algerian cooperation in the hydrocarbons sectors is the agreement between Sinopec and Algeria's state-owned energy giant, Sonatrach, centered on the Zarzaitine oil field.[70] First signed in 2003 and renewed in 2022, the $490 million production-sharing agreement aims to extract 95 million barrels through the drilling of 12 new wells, refurbishment of gas lift units, and implementation of emissions reduction measures.

The recent discovery of significant shale gas reserves in Algeria has also presented new avenues for foreign investors, including China.[71] Should Algeria successfully develop its shale gas industry, it could attract increased interest from Chinese companies seeking to expand their global portfolios in unconventional energy sources. More broadly, this growing partnership aligns with Algeria's strategy of attracting greater foreign capital into its energy sector.[72]

In parallel with its hydrocarbon investments, China has shown a growing interest in supporting Algeria's energy diversification strategy. This was underscored by a Memorandum of Understanding signed between Sinopec and Sonatrach in 2024, which explicitly included renewable energy initiatives.[73] A notable example of Chinese investment in Algeria's solar energy sector is the photovoltaic project developed by Yingli, a leading Chinese solar energy firm.[74] PowerChina has also played a significant role in the development of a 233 MW solar power plant in Adrar, one of Algeria's most ambitious renewable energy initiatives.[75] The project, developed by a consortium led by Yingli, alongside Sinohydro Corp and China Hydropower Engineering Consulting Group, consists of 16 separate solar parks and represents PowerChina's largest overseas solar EPC contract to date.[76]

More recently, PowerChina began work on a 220 MW solar photovoltaic plant in Biskra, while a Chinese consortium launched an 80 MW project in Ouled Djellal, just south of Biskra.[77] Both projects are slated for completion by 2025.[78] These developments are part of Algeria's 2 GW solar auction held in November 2023, in which Chinese companies secured nine out of the fifteen projects.[79] In March 2024, the China State Construction Engineering Corporation also commenced construction on a 200 MW solar plant in El M'Ghair.[80] Further expanding energy cooperation, a major agreement was signed between the Algerian conglomerate Elec and China's LONGi Green Energy to establish a local manufacturing plant for high-efficiency solar panels.[81] However, despite these

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[67] Mai Wagih Alsadeq, Yasmin Nassar, and Ahmed Wagdy Abd Eldayem. "Predicted Effect of the Grand Ethiopian Renaissance Dam on the Epilimnion Temperature in the High Aswan Dam Reservoir." World Water Policy 11, no. 2 (2025): 439–60. https://doi.org/10.1002/wwp2.12249.

[68] Ngambouk Vitalis Pemunta, Ngo Valery Ngo, Choumbou Raoul Fani Djomo, et al. "The Grand Ethiopian Renaissance Dam, Egyptian National Security, and Human and Food Security in the Nile River Basin." *Cogent Social Sciences* 7, no. 1 (2021): 1875598. https://doi.org/10.1080/23311886.2021.1875598.

[69] Yahia H. Zoubir, "Les relations de la Chine avec les pays du Maghreb : la place prépondérante de l'Algérie." Économie. *Confluences Méditerranée* 109, no. 2 (2019): 91–103. https://doi.org/10.3917/come.109.0091.

[70] Dania Saadi, "Algeria's Sonatrach, Sinopec sign $490 mil production sharing agreement for Zarzaitine," S&P Global, May 29, 2022, https://www.spglobal.com/commodity-insights/en/news-research/latest-news/crude-oil/052922-algerias-sonatrach-sinopec-sign-490-mil-production-sharing-agreement-for-zarzaitine.

[71] Simone Tagliapietra, "Energy in North Africa: Challenges and Opportunities," *Atlantic Community*, March 4, 2019, https://atlantic-community.org/energy-in-north-africa-challenges-and-opportunities/.

[72] U.S. Department of State, "2023 Investment Climate Statements: Algeria," Accessed July 5, 2025, https://www.state.gov/reports/2023-investment-climate-statements/.

[73] *Reuters*, "Algeria's Sonatrach, China's Sinopec sign MoU to expand cooperation - statement," June 7, 2024, https://www.reuters.com/business/energy/algerias-sonatrach-chinas-sinopec-sign-mou-expand-cooperation-statement-2024-06-07/.

[74] *Power Technology*, "Top five solar PV plants in operation in Algeria," September 9, 2024, https://www.power-technology.com/data-insights/top-five-solar-pv-plants-in-operation-in-algeria/

[75] Militsa Mancheva, "PowerChina cuts ribbon on 233-MW PV plant in Algeria," Renewables Now, January 25, 2016, https://renewablesnow.com/news/powerchina-cuts-ribbon-on-233-mw-pv-plant-in-algeria-510285/

[76] Ibid.

[77] *Enerdata*, "Chinese firms begin construction of two solar projects (300 MW) in Algeria," April 24, 2024, https://www.enerdata.net/publications/daily-energy-news/chinese-firms-begin-construction-two-solar-projects-300-mw-algeria.html

[78] Ibid.

[79] Ibid.

[80] Ibid.

[81] Hana Saada, "Algeria, China Seal Strategic Solar Energy Pact,| *Dzair Tube*, April 21, 2025, https://www.dzair-tube.dz/en/algeria-china-seal-strategic-solar-energy-pact/.

developments, China faces significant challenges in scaling up its role in Algeria's energy sector. Chief among these is the country's complex regulatory environment, widespread corruption, and institutional opacity, particularly within Sonatrach.[82]

Beyond solar energy, nuclear power has emerged as a potential area of collaboration. An early example of Chinese involvement is the nuclear reactor built by CNNC in Ain Oussara, completed in 1993.[83] While Algeria's nuclear ambitions remain modest and largely theoretical, China's expertise could provide valuable support if Algiers decides to seriously pursue nuclear energy. Financial and institutional constraints, however, continue to impede progress, much like in Algeria's renewable energy plans.[84] Nevertheless, a meeting in April 2025 between the Algerian government and the president of CNNC may signal a new phase in bilateral nuclear cooperation, in particular regarding the previously established specialized working group tasked with preparing and launching a project for the production of radioactive isotopes in Algeria.[85]

To sum up, Algeria's push for energy diversification presents enhanced opportunities for China. Yet, potential cooperation remains largely unrealized. Beijing continues to approach the Algerian energy sector with caution, mindful of persistent governance challenges, corruption, opaque decision-making processes, and unpredictable policy shifts. These factors have historically deterred foreign investors, and China is no exception, as they contribute to an investment climate that remains difficult to navigate, thereby limiting the scale and speed of potential Chinese engagement in Algeria's energy transition.[86]

Libya

Prior to the 2011 revolution, Chinese firms such as CNPC, Sinopec, and CNOOC were actively involved in infrastructure and energy projects across Libya, drawn by China's interest in securing access to Libya's high-quality sweet crude oil.[87] However, the outbreak of conflict in 2011 forced the abrupt suspension of Chinese operations, with many Chinese businesses being attacked, looted, and forced to evacuate, leading to a near-complete Chinese withdrawal from the country.[88]

For much of the following decade, Libya's instability and fragmented governance deterred foreign investors, including from Chinese companies.[89] Nevertheless, since 2018, both Libyan governments and Beijing have gradually worked to restore energy cooperation.[90] That year, PetroChina signed an oil purchase deal with Libya's National Oil Corporation (NOC),[91] followed by a 2019 agreement with CNPC involving both crude oil purchases and exploration projects.[92] In 2023, Libyan Minister of Economy, Muhammad al-Hawaij, formally invited Chinese companies to return, announcing the creation of the Libyan-Chinese Joint Economic Chamber to encourage investment and highlight opportunities in fossil fuels and infrastructure.[93]

While Libya remains focused on revitalizing its fossil fuel sector, authorities also have signaled an intention to diversify its energy mix. China has supported Libya's nascent renewable energy efforts, particularly in solar and wind energy. A notable example is the 100 MW Kufra solar farm, located in southeastern Libya, which spans 200 hectares and aims to alleviate energy shortages in the region.[94] Additionally, PowerChina, in partnership with the French state-owned EDF, is developing a 1,500 MW solar plant in eastern Libya, representing one of the most ambitious renewable initiatives in the country.[95]

Despite these promising initiatives, Libya's internal divisions continue to hinder investment. Political fragmentation, frequent leadership changes, and security concerns have created a highly uncertain business environment, slowing progress in both the fossil fuel and renewable energy

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[82] John Calabrese, "The New Algeria" and China, *Middle East Institute*, January 26, 2021, https://www.mei.edu/publications/new-algeria-and-china.

[83] Le Monde, "Les experts s'interrogent toujours sur la véritable nature du réacteur nucléaire d'Aïn-Oussera au sud d'Alger," May 26, 1991, https://www.lemonde.fr/archives/article/1991/05/26/les-experts-s-interrogent-toujours-sur-la-veritable-nature-du-reacteur-nucleaire-d-ain-oussera-au-sud-d-alger_4006307_1819218.html.

[84] Victor Dionne, "Algérie: vers le nucléaire… et le vert?," *Perspective Monde*, March 4, 2021, https://perspective.usherbrooke.ca/bilan/servlet/BMAnalyse/3090

[85] Jonathan Fulton, "China-Algeria meeting on nuclear energy cooperation, Kuwaiti delegation in Beijing for political consultations, Zhai Jun on the road again - this time in Doha," *The China-MENA Newsletter*, April 28, 2025, https://chinamenanewsletter.substack.com/p/china-algeria-meeting-on-nuclear

[86] See note 72, Simone Tagliapietra, March 4, 2019;
François Lafargue, "The economic presence of China in the Maghreb: Ambitions and limits," *Observatoire du monde arabo-musulman e du Sahel* 3, no. 294, Fondation pour la recherche stratégique, October 29, 2018. https://www.frstrategie.org/sites/default/files/documents/programmes/observatoire-du-monde-arabo-musulman-et-du-sahel/publications/en/294.pdf.

[87] Frederic Wehrey and Sandy Alkoutami, "China's Balancing Act in Libya," Carnegie Endowment for International Peace, May 10, 2020, https://carnegieendowment.org/posts/2020/05/chinas-balancing-act-in-libya.

[88] Mordechai Chaziza, "China's Libya Policy and the BRI: Sights Set on the Future," Middle East Institute, December 22, 2020, https://www.mei.edu/publications/chinas-libya-policy-and-bri-sights-set-future.

[89] Ibid.

[90] Sami Zaptia, "PetroChina to buy Libyan oil," *LibyaHerald*, March 2, 2018, https://libyaherald.com/2018/03/petrochina-to-buy-libyan-oil/.

[91] Ibid.

[92] Sami Zaptia, "Libya and China discuss oil cooperation in Libya," LibyaHerald, July 26, 2019, https://libyaherald.com/2019/07/libya-and-china-discuss-oil-cooperation-in-libya/.

[93] Jonathan Fulton, "Beijing is making inroads in North Africa," *Atlantic Council*, October 15, 2024, https://www.atlanticcouncil.org/blogs/menasource/china-north-africa-focac-cascf-trade/.

[94] Sami Zaptia, "Foundation stone laid for a 100-megawatt solar power project in Kufra – to be implemented by Chinese," *LibyaHerald*, March 2, 2020, https://libyaherald.com/2020/03/foundation-stone-laid-for-a-100-megawatt-solar-power-project-in-kufra-to-be-implemented-by-chinese/.

[95] Antonino Neri, "La Libia punta a diversificare il suo mix energetico," *Energia Oltre*, October 4, 2024, https://energiaoltre.it/la-libia-punta-a-diversificare-il-suo-mix-energetico.

sectors.[96] Frequent disruptions in oil production have made foreign investors cautious, while renewable projects face bureaucratic and logistical obstacles.[97] Nevertheless, China's neutrality between Libya's rival governments has enabled it to engage with both sides and to maintain access to Libya's significant oil reserves, particularly in the east, where much of the country's energy infrastructure is located.[98]

In essence, Sino-Libyan energy ties suffered a severe blow in 2011. While full re-engagement has been slow, China is cautiously exploring opportunities to rebuild relations and, possibly, expand them to include renewable energy projects. So far, Beijing has opted for selective involvement rather than committing to large-scale investments.[99] This approach could shift if Libya achieves greater political stability, which would create a more favorable context for reconstruction and energy cooperation.[100]

Tunisia

Unlike Libya and Algeria, Tunisia is not a hydrocarbon exporter, and fossil fuels do not dominate its trade relationship with China.[101] However, Tunisia's growing focus on renewable energy has made it an increasingly attractive market for Chinese companies seeking opportunities in the sector. With its proximity to both Europe and Libya, Tunisia offers strategic advantages for Chinese investors looking to expand in North Africa and the rest of the region.[102]

In recent years, Tunisia has pursued an ambitious energy diversification strategy, with China seen by Tunisian policymakers as an important partner. This was demonstrated by Prime Minister Kamel Maddouri during his speech at the Forum on China-Africa Cooperation in September 2024, where he reaffirmed Tunisia's commitment to providing "all necessary structures and guarantees" to Chinese firms, particularly in the renewables sectors.[103] China has responded cautiously but with increasing interest, engaging politically and economically through new deals and investments.

In 2019, a key milestone was achieved with the signing of a Memorandum of Understanding between Tunisian authorities and Chinese renewable energy companies on solar energy development.[104] This collaboration has extended beyond the supply of Chinese photovoltaic materials, which now dominate Tunisia's solar panel imports, to include significant Chinese investments.[105] One notable example is the Kairouan photovoltaic power plant, a 100 MW facility built with Chinese expertise.[106] In addition to Kairouan, China has committed $200 million for two new solar power plants, reinforcing its commitment to Tunisia's energy transition.[107]

Despite this growing cooperation, China faces stiff competition from European firms who continue to dominate Tunisia's energy sector.[108] A clear example of Europe's strong presence is the Elmed project, a planned 200 km long submarine high voltage electricity cable interconnection with Italy, backed by over €450 million in EU and European funding.[109] Similarly, France's HDF Energy is leading a major green hydrogen project, which is expected to generate clean energy for both domestic use in Tunisia and export to Europe.[110]

Beijing has also expressed interest in large-scale infrastructure projects through the Belt and Road Initiative, progress has been slow to say the least. Most projects outlined in the 2018 Memorandum of Understanding remain in the planning stages, including the development of Tunisia's southern port of Zarzis into an economic and trade hub and the 140 km railway linking the coastal city of Gabes.[111] A likely factor is Tunisia's ongoing economic and political crisis, which has complicated Tunis' capacity to implement major initiatives, slowing down potential Chinese investments. [112]

Ultimately, while Tunisia offers a promising renewable energy market for Chinese green energy and infrastructure investment, persistent political and economic uncertainty remain obstacles to deeper cooperation. Should Tunisia provide a more stable and transparent investment climate, Chinese firms could play a larger role in the country's energy transition in the years ahead.

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[96] U.S. Department of State, "2023 Investment Climate Statements: Libya," Accessed July 5, 2025, https://www.state.gov/reports/2023-investment-climate-statements/libya/.

[97] See note 97, Antonino Neri, October 4, 2024.

[98] See note 89, Frederic Wehrey and Sandy Alkoutami, May 10, 2020.

[99] See note 90, Mordechai Chaziza, December 22, 2020.

[100] Ibid.

[101] Data from Institut National de la Statistique – Tunisie.

[102] Ahmed Nadhif, "China-Tunisia Strategic Partnership: Why Now?," *Emirates Policy Center*, July 3, 2024, https://epc.ae/en/details/featured/china-tunisia-strategic-partnership-why-now-.

[103] *Agenzia Nova*, "La Tunisia offre 'strutture e garanzie' alla Cina nel settore delle energie rinnovabili," September 4, 2024, https://www.agenzianova.com/news/la-tunisia-offre-strutture-e-garanzie-alla-cina-nel-settore-delle-energie-rinnovabili/.

[104] *CGTN*, "Tunisia Energy: Chinese experts help build solar power plant," July 28, 2019, https://news.cgtn.com/news/314d544f784d4464776c6d636a4e6e62684a4856/index.html.

[105] Ibid.

[106] See note 105, *Agenzia Nova*, September 4, 2024.

[107] Alessandro Giuli, "Ombre cinesi sulla Tunisia di Saïed," Med-Or Italian Foundation, November, 4, 2022, https://www.med-or.org/news/ombre-cinesi-sulla-tunisia-di-sa%C3%AFed.

[108] See note 105, *Agenzia Nova*, September 4, 2024.

[109] ANDA, "Tunisia e Ue firmano un accordo su un partenariato per l'energia," June 13, 2024, https://www.ansa.it/sito/notizie/mondo/news_dalle_ambasciate/2024/06/13/tunisia-e-ue-firmano-un-accordo-su-un-partenariato-per-lenergia_b3e12156-7089-49f0-ab62-6b2bd7808dee.html.

[110] France Hydrogène, "Un projet d'hydrogène en Tunisie pour HDF Energy," August 30, 2024, https://www.france-hydrogene.org/magazine/un-projet-dhydrogene-en-tunisie-pour-hdf-energy/.

[111] Louis Dugit-Gros and Sarbina Henneberg, "China's Presence in Tunisia: How Far Has It Come, and Where Is It Headed?," The Washington Institute for Near East Policy, *PolicyWatch* no. 3728, April 6, 2023, https://www.washingtoninstitute.org/policy-analysis/chinas-presence-tunisia-how-far-has-it-come-and-where-it-headed.

[112] Marwa Zouari, Ewald Schnug and Silvia Haneklaus, "The Potential impact of the Belt and Road Initiative on fertilizer in Tunisia and the Maghreb states," 50th CIEC International Fertilizer Conference 4-7 September 2024, Linyi, Arab Maghreb Union, https://iae.cas.cn/ciec/history/sjx/202505/P020250514633113591444.pdf.

Morocco

As in the case of Tunisia, China's involvement in Morocco is concentrated primarily in the renewable energy sector. Morocco has articulated one of the most ambitious energy transition strategies on the African continent, a vision that aligns well with China's expanding role as a global leader in green technologies. This alignment has fostered a steadily growing partnership between the two countries, with China emerging a key player in Morocco's ongoing transition toward sustainable energy and emerging industries.

In recent years, Morocco has made significant investments in solar, wind, and green hydrogen projects, with Chinese companies playing increasingly prominent roles. A flagship example of Sino-Moroccan collaboration is the Ouarzazate Solar Farm, one of the world's largest solar energy installations, located in southern Morocco.[113] Initially supported by Chinese investment, the plant remains central to Morocco's renewable energy strategy. The involvement of China's State Power Investment Corporation in its development highlights the depth and continuity of the bilateral relationship in this sector.[114]

China has also supported Morocco's efforts to expand its wind energy capacity.[115] Notable projects include the Tangier and Nador wind farms, both of which have benefited from Chinese financing and operational support. The Tangier Wind Farm, in particular, recently saw three Chinese companies selected as operators.[116] Moreover, the Mohammed VI Tanger Tech City, an innovation hub focused on green tech and renewables, has been positioned to attract Chinese investment, aiming to further integrate Chinese clean energy companies, such as those in electric vehicle and battery sectors, into Morocco's broader industrial ecosystem.[117]

Although Morocco is rapidly scaling up its renewable capacity, fossil fuels continue to play a significant role in its energy mix. Accordingly, China and Morocco maintain also collaborative ties in oil and gas. CNPC, for instance, has signed a Memorandum of Understanding with Morocco's National Office for Hydrocarbons and Mines.[118] Another example is the expansion of the Jerada Power Plant by SEPCO III Electric Power Construction, a Chinese state-owned enterprise, which reflects how despite Morocco's efforts to phase out coal, ongoing Sino-Moroccan cooperation in conventional energy still plays a role in the country's energy grid.[119]

To conclude, as Morocco continues its energy transition, China remains an essential partner, supporting the country's diversification efforts while deepening economic and technological ties. This collaboration not only advances Morocco's ambition to become a regional leader in clean energy but also exemplifies China's flexible and pragmatic approach to energy diplomacy in North Africa.

Conclusion

China's energy strategy has undergone a radical re-orientation over the past three decades. Once defined by an attempt to establish a crude oil self-reliance, China became a net oil importer in 1993. Since the early 2000s, Beijing has actively constructed a domestic legal and policy framework to foster the development of renewable energy. The 2005 *Renewable Energy Law* and the 2016 "1 + 2 + 3" *Arab Policy Paper* represent two milestone documents that noy only embedded renewable energy into China's national agenda but also projected it outward into foreign policy. The internationalization of Chinese energy interests, specifically in the MENA region, has been accelerated by domestic overcapacity in renewable energy-related products, especially solar panels, facilitating a shift from so-called "barrel diplomacy" to a new form of "kilowatt-hour diplomacy."

North Africa serves as an illustrative, if uneven, proving ground for this outward-facing green energy strategy. China's presence in North Africa has transitioned from that of a crude oil importer to a supplier of renewable energy technologies and infrastructure. While China's footprint in the region remains smaller than Europe's long-standing economic and political influence, the accelerating energy transition across the region is opening new space for Chinese engagement. Nevertheless, this expansion occurs within a competitive environment marked by significant variability in political stability, regulatory transparency, and international alignments.

Egypt exemplifies how large-scale Chinese EPC contracts and equity investments can accelerate national flagship projects, such as the Benban Solar Park or the Red Sea giant wind complex. However, even in cases of deep cooperation, non-Chinese actors often retain primacy in sensitive sectors, such as nuclear power. In contrast, Algeria offers a mirror image: an energy resource-rich state where Chinese firms are cautiously engaged in solar auctions and shale prospects but are constrained by opaque regulation and entrenched corruption. In Libya, Chinese operators have only tentatively re-entered the energy sector, balancing oil off-take and pilot renewable initiatives, but remain hostage to political fragmentation and security risks. Morocco and Tunisia, by contrast, have welcomed Chinese finance and technology in concentrated solar power, wind farms, and green-tech manufacturing. However, intense European competition and domestic political volatility continue to temper the depth of Chinese engagement.

What emerges from this landscape is not a uniform "renewables rush," but rather a pattern of differentiated engagement. Where national decarbonization roadmaps are credible and governance obstacles manageable, Chinese

[113] Mohamad Zreik, "The Belt and Road Initiative and Morocco: Opportunities and Challenges for Strengthening Economic Relations with China," Moroccan Institute for Policy Analysis, July 2024, https://mipa.institute/wp-content/uploads/2024/07/Zreik-The-Belt-and-Road-Initiative-and-Morocco.pdf.

[114] Ibid.

[115] *Green Economy Agency*, "Energia, Cina lancia progetto 'Aeolon' in Marocco: stabilimento per eolico a Nador," January 25, 2024, https://geagency.it/breaking-news/energia-cina-lancia-progetto-aeolon-in-marocco-stabilimento-per-eolico-a-nador/.

[116] See note 47, Davide Giacomo Zoppolato and Shisong Jiang, 2023.

[117] Yahia H. Zoubir, "Expanding Sino-Maghreb Relations: Morocco and Tunisia," Chatham House, 26 February, 2020 (Updated 30 June 2022), https://www.chathamhouse.org/2020/02/expanding-sino-maghreb-relations.

[118] See note 115, Mohamad Zreik, July 2024.

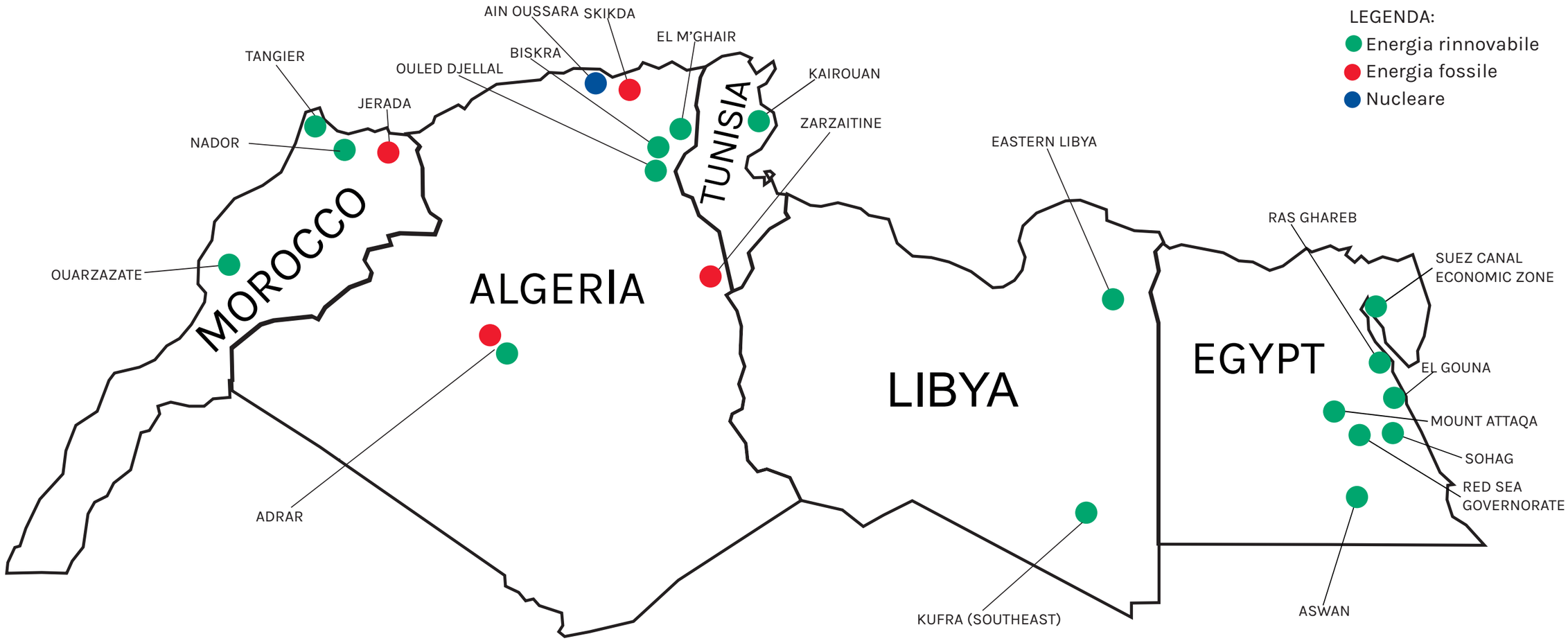
[119] Ibid.

firms tend to move rapidly beyond EPC contracting to take on equity stakes, establish joint ventures, and invest in local manufacturing or R&D hubs. Where regulatory frameworks are unpredictable or security risks acute, Chinese firms content themselves with low-commitment, incremental projects that preserve future investment options without overexposure.
For North African governments, sustaining Chinese interest without crowding out domestic industry or European climate finance will require clearer procurement procedures, predictable feed-in tariffs and robust social and environmental safeguards.

With regard to nuclear energy, although Sino-North African cooperation remains limited, China has signaled growing interest, as demonstrated by its recent Memorandum of Understanding with Saudi Arabia. In a context of intensifying strategic competition, particularly with the United States, nuclear cooperation could emerge as a powerful tool in China's regional diplomacy.[120] It is therefore plausible that China's role in the North African nuclear sector will expand in the future, especially if regional governments seek alternatives to Western nuclear technology providers.

In conclusion, despite persistent challenges, ranging from governance deficits and political instability to global competition, China's role in North Africa's energy future is poised to grow. The dual pressures of climate change and energy security are prompting both China and its North African partners to seek deeper, more sustainable forms of energy cooperation. Whether this leads to a transformative partnership will depend on the extent to which both sides can align long-term strategic interests with the immediate realities of local energy governance and international politics.

[120] Hu Yuwei, "China, Saudi Arabia Strengthen Nuclear Safety Collaboration," *Global Times*, April 21, 2025, https://www.globaltimes.cn/page/202504/1332558.shtml.



Chinese Energy Investments in North Africa

Country	Location / Area	Type of Energy	Project
Egypt	Aswan	Renewable – Solar	Benben Solar Park
Egypt	El Gouna (north)	Renewable – Solar	Solar plant
Egypt	Suez Canal Economic Zone	Renewable – Solar	Photovoltaic glass production
Egypt	Sohag	Renewable – Solar	Solar & electricity storage research lab
Egypt	Red Sea Governorate	Renewable – Wind	Wind power project
Egypt	Ras Ghareb	Renewable – Wind	Wind power project
Egypt	Mount Attaqa	Renewable – Hydropower	Pumped-storage hydropower plant
Algeria	Adrar	Fossil – Refining	Refining infrastructure
Algeria	Skikda	Fossil – Refining	Refining infrastructure
Algeria	Zarzaitine	Fossil – Oil	Oil field
Algeria	Adrar	Renewable – Solar	Solar power plant
Algeria	Biskra	Renewable – Solar	Photovoltaic plant
Algeria	Ouled Djellal (south of Biskra)	Renewable – Solar	Photovoltaic plant
Algeria	El M'Ghair	Renewable – Solar	Solar plant
Algeria	Ain Oussara	Nuclear	Nuclear reactor
Libya	Kufra (southeast)	Renewable – Solar	Solar farm
Libya	Eastern Libya	Renewable – Solar	Solar plant
Tunisia	Kairouan	Renewable – Solar	Photovoltaic power plant
Morocco	Ouarzazate	Renewable – Solar	Solar Farm
Morocco	Tangier	Renewable – Wind	Wind farm
Morocco	Nador	Renewable – Wind	Wind farm

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