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Expanding China's Role in Africa's Electricity Integration

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Recommendations for policymakers

- Dovetail plans for national transmission networks with the facilitation of cross-border transmission links to expand future power-trading opportunities.
- Investigate bundling electrification and industrialisation plans and embedding them in industrial zones to spur industrialisation and provide offtake agreements.
- Boost teams' knowledge of the latest technological advances in China's national electrification process to benefit from the unique public–private synergy that has shaped Chinese development.

Executive summary

Africa has vast potential for sustainable power generation and considerable local demand for stable electricity. China's lead in new energy technologies and its long-standing role as a contractor and financier in Africa offer significant opportunities to the continent. Yet this cooperation could be deepened further. This brief outlines the continent's ambitious plans for an integrated continental grid and power market, and how these draw on regional power pools that already enable energy trading. It then highlights current levels of Chinese involvement in electricity integration in Africa. The final section draws on interviews with Chinese experts to suggest ways Africa can facilitate and expand cooperation with Chinese entities to advance regional and continental power system integration goals.

Introduction

Africa is on the cusp of an electric revolution. The continent's solar panel imports are increasing steadily¹ and local e-mobility companies, battery-swapping services and other 21st-century enterprises are growing at pace.

However, this progress is happening from a low base. More than half of the continent's population still lacks access to stable electricity, which impedes educational, health and environmental outcomes.² Greater electricity integration would significantly advance this progress. It would allow some countries to profit from sustainable energy generation, while also buffering receiving countries from blackouts and load-shedding.

The potential for electricity cooperation with Chinese entities has expanded due to domestic shifts within China. These include the reframing of electricity as part of national security since the dawn of the Xi Jinping era, and heavy state and private investment in the development of China as the world's first electro-state.

African ambitions have also responded to the global shift toward securing access to transition minerals used in some of these new energy technologies. That, along with the continent's own policy planning for mineral beneficiation and electricity integration, has set the scene for new forms of Africa–China cooperation on energy.

This policy brief focuses on this cooperation in energy systems integration, highlighting African continental and regional advances towards a single electricity market powered by a continental grid. While that dream still has to be realised, the continent has made significant strides forward. It then identifies China's proven strengths in this field and looks

1 Dave Jones, "The First Evidence of a Take-Off in Solar in Africa", Ember, August 26, 2025.

2 UN Sustainable Development Group, "[Decoding Africa's Energy Journey: Three Key Numbers](#)", January 27, 2025.

at where more cooperation could benefit Africa. To identify bottlenecks, the brief draws on interviews with Chinese experts³ to offer concrete suggestions for adjustments that could take this cooperation to the next level.

African regional electricity integration initiatives

Africa has made significant strides towards integrating electricity systems.

At the continental level, the AU's plans for electricity integration are central to its Agenda 2063 and the African Continental Free Trade Agreement.

Three major projects are emblematic of this drive. First, the African Single Electricity Market (AfSEM) aims to build a unified continental electricity grid by integrating national grids through cross-border transmission networks. In addition to using existing regional power pools (see below), the initiative also includes policy integration to create a single market, allowing states to trade electricity on shared terms. The AU is working with bodies like the Regional Association of Energy Regulators for Eastern and Southern Africa (RAERESA) to enable regulatory integration and to set standards for tariffs, grid specifications and market rules. AfSEM is being developed in collaboration with the African Development Bank (AfDB), the World Bank and the EU.⁴

Second, and linked to this drive, is the AfDB and the World Bank's Mission 300 project, which aims to connect 300 million Africans to sustainable electricity by 2030. With support from the Global Energy Alliance for People and Planet, the Rockefeller Foundation and Sustainable Energy for All, the project intends to combine electricity provision with job creation.⁵ It works with three cohorts of African states, with an emphasis on national ownership and cross-border integration of project tracking and monitoring, as well as aligning investment flows between states. Key to the initiative is expanding national grids while increasing rural access via mini-grids, as well as mobilising policy reform and derisking private investment through mechanisms like the World Bank's Multilateral Investment Guarantee Agency.⁶

3 The interviews were conducted remotely in March 2026. They were with Bai Yunwen at the Institute of Finance and Sustainability, and with Wang Yongzhong, Chen Zhaoyuen and Zhao Yating at Chinese Academy of Social Sciences. The interviews covered similar questions and results were synthesised from all these conversations without assigning specific attribution.

4 Global Gateway, "Advancing the African Single Electricity Market (AfSEM) through African-European Knowledge Exchange", July 8, 2026.

5 African Development Bank, "Mission 300: About the Initiative", accessed September 17, 2026, <https://www.afdb.org/en/topics-and-sectors/initiatives-and-partnerships/mission-300>.

6 World Bank Group, "MIGA: Catalyzing Investments Into Developing Countries to Support Economic Growth, Reduce Poverty, and Improve People's Lives", accessed September 17, 2026, <https://www.miga.org/about-us>.

Third, the AU is providing the overall vision for continental electricity integration through its Continental Master Plan (CMP) for power generation and transmission.⁷ The CMP was developed by AUDA-NEPAD in cooperation with the EU Global Technical Assistance Facility, the International Atomic Energy Agency and the International Renewable Energy Agency. It sets out a plan for an integrated continental grid and a single electricity market, providing the roadmap for AfSEM.

Relatedly, the COP28 climate summit also saw the announcement of the Africa Green Industrialisation Initiative, aimed at aligning the development of a single electricity market with sustainable industrialisation to build economic growth opportunities that draw value from the continent's vast mineral and natural resources. At the 2025 African Climate Summit, a cooperation framework to mobilise \$100 billion to support this industrial buildout was signed.⁸

Existing African regional bodies provide key building blocks for these initiatives. The Common Market for Eastern and Southern Africa (COMESA) launched its Accelerating Sustainable and Clean Energy Access Transformation Project Preparation Facility in 2026. Supported by the World Bank, the initiative aims to streamline project pipelines for electrification initiatives in Eastern and Southern Africa.⁹ In the process, it hopes to facilitate energy access to 100 million people. It will target sticking points such as technical structuring, financial modelling and risk allocation to derisk investment and make projects more appealing to private investors.¹⁰

African regional power pools already provide the blueprint and initial technical backbone for a future continental electricity market. The continent has five regional power pools: the Eastern Africa Power Pool (EAPP), Southern African Power Pool (SAPP), West African Power Pool (WAPP), Central African Power Pool (CAPP) and COMELEC (Comité Maghrébin de l'Électricité) for North Africa. Of the five, SAPP is arguably the most mature, with utility companies and traders in 12 member countries already trading power through bilateral agreements and competitive market platforms.¹¹

Policy coordination and physical transmission initiatives are rapidly boosting power trade within these blocks. For example, WAPP successfully tested uninterrupted power flows across 12 countries through the North Core/Dorsale Nord transmission project and achieved regional tariff harmonisation with the aim of launching a unified day-ahead power market. This would allow traders to access next-day electricity delivery through a coordinated regional mechanism by the end of 2026.¹²

7 AUDA-NEPAD, "The African Continental Master Plan: A Continental Approach to Africa's Energy Future", accessed September 17, 2026, <https://www.nepad.org/continental-master-plan>.

8 Africa50, "Africa Launches Landmark Green Industrialisation Framework With \$100 Billion In New Commitments", September 8, 2025.

9 "Unveiling of ASCENT Project for Renewable Electrification", *KenyaNews*, April 20, 2026.

10 "COMESA PPF Program to Provide Electricity Access to Millions", *KenyaNews*, April 22, 2026.

11 Africa Energy Portal, "Powering a Regional Future: New Tools to Unlock Africa's Cross-Border Electricity Trade", Blog, July 23, 2026.

12 Africa Energy Portal, "Powering a Regional".

The power pools are also increasingly linking to each other. The Zambia–Kenya–Tanzania Power Interconnector, an initiative developed with support from the AfDB, the World Bank and the EU, aims to link three national electricity markets to facilitate cross-border electricity trade and avoid blackouts. The project will link the EAPP and the SAPP.¹³ The implementation phase launched in 2025, with completion planned for 2027.¹⁴ Tanzania is one of the few countries belonging to more than one power pool, and functions as a key regional link between the pools via interconnector projects linking to Malawi¹⁵ and Mozambique.¹⁶

These developments have brought the dream of an integrated African electricity market much closer to reality. While many loops still have to be closed, the continent has achieved a much more concrete blueprint for integration through the interplay of continental coordination and pre-existing regional platforms that underpin ongoing interconnections within and between regional power pools.

China's involvement in African electricity integration

China is a key partner in the development of African electricity capacity. Chinese contractors and financing institutions have funded and built large amounts of installed generation capacity across the continent. Between 2000 and 2024, Chinese entities spent \$33 billion in building about 32GW of installed capacity in 30 African countries.¹⁷ In sub-Saharan Africa, Chinese projects account for about one-fifth of total capacity.¹⁸

The bulk of these projects were planned and implemented bilaterally by China and individual African countries. However, thanks to some of the African initiatives highlighted above, they have also contributed to greater energy trading between countries and so to overall systemic integration.

For example, the Kafue Gorge Lower Hydropower Station, built by PowerChina, provides a total installed capacity of 750MW and increased Zambia's electricity supply by 38%. Zambia's membership in the SAPP has made the dam a major contributor to power stability throughout Southern Africa.¹⁹

13 Government of Zambia, Presidential Delivery Unit, "[Zambia Building an East Africa Power Interconnector to Cut-down Loadshedding](#)", Press Release, April 17, 2025.

14 Natasha Mwaba, "[Zambia-Tanzania Power Interconnector Implementation Project Phase Launched](#)", Zambian Ministry of Energy, Press Release, April 12, 2025.

15 RTI International, "Terms of Reference of Feasibility, Conceptual Design, and Tender Documents, of Tanzania-Malawi 400 kV Transmission Line Interconnector", accessed September 17, 2026, https://www.rti.org/sites/default/files/tor_feasibility_study_tanzania_-_malawi_400kv_interconnector_nov_12.pdf.

16 SolarQuarter, "[Malawi Nears Energy Breakthrough With Mozambique Power Interconnection Project](#)", Africa Energy Portal, April 2, 2026.

17 Frangton Chiyemura, "[Powering Africa: China's Expanding Role in the Continent's Energy Future](#)", The China-Global South Project, September 26, 2025.

18 Adjekai Adjei, "[Inside China's Power Play: Understanding the Institutions Behind Africa's Energy Projects](#)", The China-Global South Project, July 8, 2025.

19 PowerChina, "[Zambia Kafue Gorge Lower Hydropower Station](#)", October 20, 2023.

In addition to energy generation capacity, Chinese companies are also involved in building links that enable energy integration. For example, the State Grid Corporation of China built transmission lines linking Ethiopia's Grand Ethiopian Renaissance Dam to domestic industrial parks and to bordering countries.²⁰ The company also developed the Ethiopia–Kenya Direct Current Power Transmission Project, enabling regional energy trade within the EAPP.²¹ These links have made Ethiopia a significant regional energy trader and contributed to East African power stability.

Similarly, Ethiopia's Ayesha II wind farm project, built by China Dongfeng, will provide electricity to neighbouring Djibouti via an integrated cross-border power and industrial corridor development.²²

Beyond physical infrastructure, China has also provided platforms for policy and planning coordination. For example, COMESA's regional energy regulatory authority has coordinated with the Administrative Centre for China's Agenda 21 (which integrates the UN's Agenda 21 Sustainable Development Goals into Chinese domestic policy) on electricity market integration.²³ COMESA also conducted extended joint training sessions with RAERESA and China's International Centre on Small Hydro Power, which falls under the Ministry of Commerce.²⁴

More broadly, the Belt and Road Initiative and the Forum on China-Africa Cooperation (FOCAC) are important spaces for coordination between China and African partners. These, in turn, provide pathways for greater Chinese involvement in AU initiatives.

Facilitating greater Chinese engagement in African energy integration

Taking Africa's electricity ambitions to the next phase will likely require greater cooperation with China. Chinese financiers and contractors could expand their role in building national electricity buildouts. For example, South Africa is currently in talks with a range of Chinese entities on support for its ambitious Integrated Resources Plan for bundled electricity expansion and industrialisation. If achieved, the plan would add 105GW of new generation capacity and 14 500km of transmission lines through 2039.²⁵ It would

20 Addis Fortune, "Ethiopia, China Partner to Power Mega Projects", Africa Energy Portal, Press Release, May 3, 2019.

21 State-owned Assets Supervision and Administration Commission of the State Council of the People's Republic of China, "[±500 KV Ethiopia-Kenya DC Power Transmission Project Put Into Trial Operation](#)", November 29, 2022.

22 ChemNet, "[Chinese Company-Built Wind Power Project in Ethiopia Goes Into Operation](#)", February 2, 2026; "[Ethiopian PM Inaugurates Chinese-Built Wind Farm Project](#)", *Xinhua*, February 1, 2026.

23 Administrative Centre for China's Agenda 21, "[A Delegation From the Energy Regulatory Agencies of the Common Market for Eastern and Southern Africa \(COMESA\) Visited the 21st Century Centre](#)", February 5, 2026.

24 RESQ Energy Hub, "[COMESA and China Strengthen Clean Energy Cooperation](#)", accessed September 21, 2026, [COMESA and China Strengthen Clean Energy Cooperation](#)

25 Tasneem Bulbulia, "[South Africa Makes Case in Beijing for Chinese Investment in Energy](#)", *Engineering News*, August 3, 2026.

significantly strengthen South Africa's role as a provider of electricity to SAPP and bolster integrated industrialisation strategies with its neighbours.

China produces more green power than any other country, having become the undisputed world leader in building battery storage and smart grids that can handle the natural fluctuations of wind and solar power generation. It is also a leader in the construction of ultra-high-voltage transmission lines that can conduct vast amounts of electricity over large distances.²⁶

These technologies will be crucial to African continental electricity plans, and it arguably behoves the AU and other bodies to coordinate more closely with the Chinese government and various Chinese entities in this field. This raises the question of which reforms would help to facilitate this cooperation. Conversations with experts at Chinese government research institutions that focus on green energy cooperation resulted in three key suggestions.

Shared taxonomies

African continental and regional bodies have made significant progress towards policy integration and the formulation of shared standards. Chinese interlocutors raised China's own experience in building a national ultra-high-voltage grid, which overcame persistent blackouts that plagued the country in the early 2000s, to argue for the further development of shared green power project implementation benchmarks and standards. This would entail expanding the African Energy Commission's current work and dovetailing it with national development plans.

Derisking financing mechanisms

As discussed above, the AU is already doing extensive work with partners like the World Bank to lower investor risk, in a context where the risk associated with African projects is frequently overstated. The interviewees suggested that this could be bolstered by working with Chinese entities to develop mixed finance models that do not increase sovereign debt and that provide investors with equity shares and joint operation deals that enable them to recoup costs.

Industrial parks

One key derisking mechanism is bundling electrification and industrialisation through industrial parks, where tenant firms provide offtake agreements for some of the energy produced. These can also produce industrial inputs that feed into broader manufacturing

26 Xiaoying You, "A Bullet Train for Power": China's Ultra-High-Voltage Electricity Grid", *BBC*, November 15, 2024.

or mineral refining. Early instances of such deals are currently being implemented in countries such as Zimbabwe as part of mineral beneficiation strategies.²⁷

Planning around external partner supply

A major issue the experts raised was the need for electricity project planning that harmonises demand on the African side with what external partners can offer. Given China's wide lead in these fields, knowledge of Chinese technology, financing protocols and offtake partners is crucial to gain as much as possible from Chinese advancement and economies of scale, while avoiding dependency. African countries could set specific strategic targets, informed by available capacity and capabilities of Chinese industry. Coordinating industrial planning policy with Chinese stakeholders in forums like FOCAC could bolster such initiatives.

Conclusion

Africa has made significant progress towards a single, integrated continental electricity market. To achieve this goal, it needs to increase cooperation with external partners. China is a key stakeholder, owing to its massive lead in new energy technology and its proven track record on the continent. However, such cooperation would have to be defined through the AU and other continental bodies' established development and electrification blueprints. It would also have to dovetail with regional and member state priorities. If Africa can align these development roadmaps with Chinese capabilities while remaining true to the continent's priorities, it could significantly speed up its advance towards broad-based electricity access and sustainable job creation.

²⁷ ["US\\$200million Beneficiation Plant Lifts Kamativi Lithium Ambitions"](#), Herald (Zambia), June 30, 2026.

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Cover image

Johannesburg, South Africa, April 11, 2012: High-voltage power lines at state-owned enterprise Eskom Electric Power Distribution Facility (via Getty Images, [Sunshine Seeds](#))

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