

WAPP's Ambition Grows Amid Reform, but further Integration needed to close gaps



Executive summary

- New cross-border trading opportunities are opening in the West African Power Pool (WAPP), but more regulatory and system reform is needed ahead of market launch in 2026.
- The Transco CLSG and North Core Interconnection Project transmission corridors will provide a physical backbone for regional power trade, but further demand-side planning and clearer pricing is required to increase the volume of exchanges.
- The ECOWAS Regional Electricity Regulatory Authority (ERERA) has established a commission to support harmonization of transmission network pricing and has introduced the WAPP network code, which includes technical standards all operators must respect.
- It continues work to establish common tariff methodologies, standardized contracts, and transparent settlement procedures in the second phase of WAPP development, focused on operationalizing interconnections between Côte d'Ivoire, Ghana, Senegal, Nigeria, and Mali
- A remaining challenge is to level up variations in institutional which create an uneven regulatory environment that hinders WAPP's ability to function as a single, coordinated market.
- The sustainability of WAPP's reforms depends on improving the financial solvency of national utilities, accelerating internal transmission upgrades, and depoliticizing cross-border energy governance.

The emergence of a new integrated market

The West African Power Pool's bold vision of an integrated electricity market is gradually materializing. With key infrastructure in place and market institutions maturing, new cross-border trading opportunities are opening up. But fragmented regulations, such as inconsistencies in tariff setting and licensing requirements between countries like Liberia and Guinea, and fragile national systems (as seen in persistent utility inefficiencies in Sierra Leone and governance instability in Niger), are delaying operational effectiveness ahead of the WAPP market launch.

Initiated by ECOWAS in 1999, WAPP was created to address West Africa's persistent energy access challenges by creating a unified regional electricity market. After decades of planning, the North Core Interconnection Project is nearing completion, adding to the 2024-commissioned Transco Côte d'Ivoire-Liberia-Sierra Leone-Guinea (CLSG) line. These developments provide a physical backbone for regional power trade. However, only 25% of the available interconnection capacity is currently being utilized — for instance, despite the full commissioning of the CLSG line, actual energy exchanges between Liberia and Sierra Leone remain sporadic due to limited demand-side planning and pricing uncertainties. Significant regulatory, institutional, and financial barriers still hinder the transition from infrastructure to market.

Regional challenges

West Africa's electricity access rates remain among the lowest globally. Countries like Guinea, Liberia, and Sierra Leone have coverage below 30%, often relying on costly diesel generators. Fragmented grids and an overdependence on national strategies have long undermined regional energy security. WAPP's synchronization of 12 national grids, completed in 2023, represents a crucial milestone. However, with only 25% of interconnection capacity being utilized, deeper issues around demand forecasting, cost recovery, and domestic absorption capacity are coming into focus.

The region also faces significant institutional asymmetries. While countries like Ghana and Côte d'Ivoire boast relatively robust generation and transmission systems, others — such as Liberia and Sierra Leone — face persistent funding and operational crises in their national utilities. This imbalance is compounded by political instability in Niger, Burkina

Faso, and Mali, leading to stalled infrastructure deployments, postponed interconnection agreements, and suspension of donor-funded reforms, such as grid upgrades in northern Mali and tariff restructuring in Niger.

The development of WAPP can be summarized in two phases: Phase one focused on building interconnections, which are far more developed in Côte d'Ivoire, Ghana, Senegal, Nigeria, and Mali compared to Guinea, Liberia, and Sierra Leone. Phase two involves making these interconnections operational — a process still underway.

Cross-border regulatory opportunities

Against this challenging backdrop, regional regulatory efforts offer new openings. The ECOWAS Regional Electricity Regulatory Authority (ERERA) has been instrumental in driving harmonization. Since 2022, ERERA has worked to establish common tariff methodologies, standardized contracts, and transparent settlement procedures. These reforms are crucial for ensuring fair trade and financial sustainability in the lead-up to the WAPP market launch, now expected in 2026.

One key challenge remains the pricing of the transmission network. ERERA has set up a commission to tackle this, highlighting the technical and economic complexity of cross-border cost allocation.

The Information and Coordination Centre (ICC), inaugurated in Benin in 2024, adds a new layer of institutional capacity to the regional electricity market. As the market operator, the ICC is responsible for facilitating real-time power trading, transmission scheduling, and data transparency. Its financial and legal independence from the WAPP Secretariat has been crucial in building trust among member states and preventing dominance by more powerful economies.

In the case of the Transco CLSG transmission line for instance, there are still different views among participating countries regarding the source and origin of cross-border energy flows. These disputes affect financial settlements and can delay power dispatch, highlighting the need for a unified protocol on metering and energy flow attribution along the CLSG corridor.

Furthermore, ERERA has introduced the WAPP network code, which includes technical standards all operators must respect — a foundational step in ensuring interoperability and reliability.

Moreover, the African Continental Free Trade Area (AfCFTA) creates additional momentum. Its provisions for infrastructure investment and service liberalization can complement WAPP’s objectives. As regional electricity trade becomes technically feasible, harmonized investment and competition policies across AfCFTA and ECOWAS can serve as a double engine for integration.

Beyond infrastructure, two regulatory opportunities are particularly important. These are clearly defining who sells what to whom, and harmonizing electricity exchanges across borders. These are fundamental to operationalizing power markets and building trust among national stakeholders.

National Regulatory landscape

Comparative ERI scores for WAPP countries						
Country	2018	2019	2020	2021	2022	2024
Benin	..	0.491	0.55	0.529	0.465	0.805
Burkina Faso	..	0.472	0.373	0.477	0.495	0.68
Cote d'Ivoire	0.553	0.519	0.497	0.564	0.573	0.657
Gabon	..	..	0.25	0.179	0.168	0.4
Gambia	0.401	0.549	0.329	0.356	0.298	0.626
Ghana	0.716	0.655	0.548	0.602	0.709	0.768
Guinea	..	..	0.422	0.312	0.306	0.398
Liberia	..	0.267	0.285	0.216	0.628	0.8
Mali	..	0.57	0.441	0.445	0.45	0.689
Mauritania	..	0.569	..	..	0.226	0.474
Morocco	..	0.512	..	0.259	..	..
Niger	..	0.631	0.611	0.499	0.478	0.799
Nigeria	0.739	0.607	0.594	0.52	0.588	0.747
Senegal	0.564	0.693	0.561	0.596	0.71	0.892
Sierra Leone	..	0.589	0.561	0.569	0.658	0.7
Togo	0.588	0.525	0.518	0.463	0.622	0.703

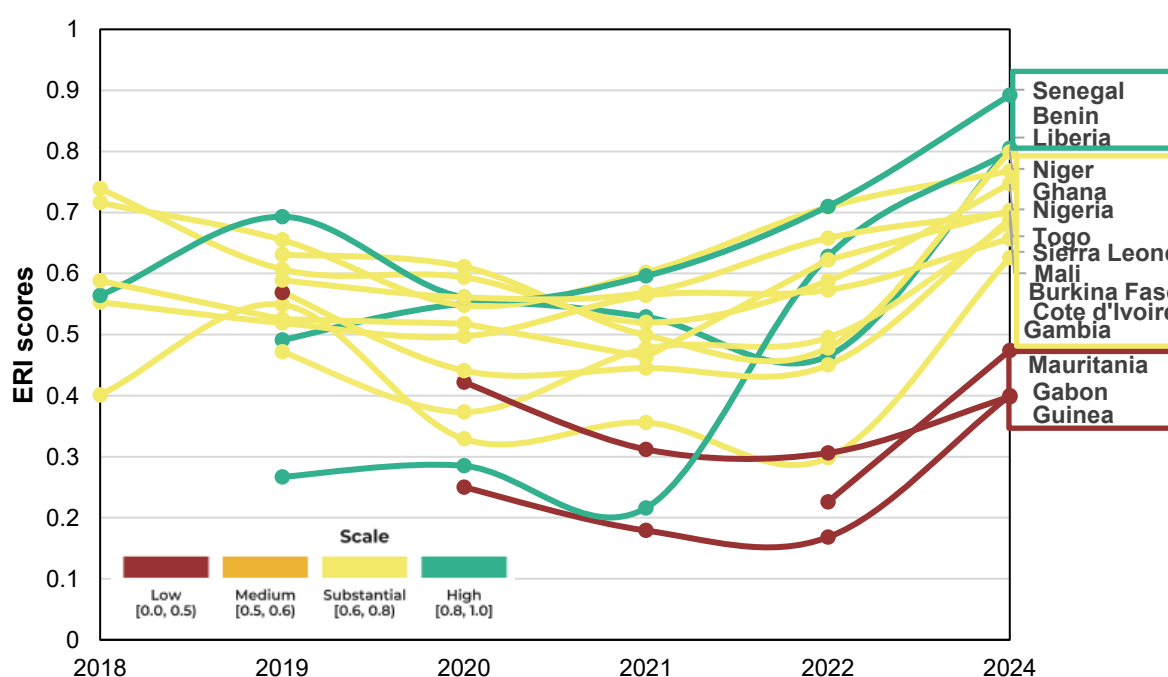
This is where the importance of improving and harmonizing regulations will achieve the greatest benefits. Electricity regulators in West Africa vary widely in their mandates, scope, and institutional capacity. This variance in institutional maturity — from Senegal’s competitive IPP frameworks to the nascent capabilities of Guinea’s AREE — creates an

uneven regulatory environment that threatens to undermine WAPP's ability to function as a single, coordinated market by 2026. As WAPP moves closer to a regional power market, the most recent ERI shows that Senegal, Benin and Liberia are the top ranked countries.

Liberia's conversion from one of the lower ranked countries on the continent to one of the highest is noteworthy in the index's seven-year history. It rose from 37th place in 2022 to 9th in 2024. The Liberia Electricity Regulatory Commission (LERC) was formally created in 2015 but only started work in 2020. It implemented its first tariff order in 2021. It has worked to standardize licensing processes and promote rural electrification and is also contributing to WAPP's CLSG operationalisation.

In May 2025 it initiated a review into Liberia Electricity Corporation (LEC)'s application for new tariffs over a three-year period. It recently endorsed a set of penalties for violating its regulations, and in March told LEC that it could not charge more for an expedited power connection service.

Figure 1: ERI Scores in WAPP – Liberia has improved the most



As well as being the leader in WAPP, Senegal is now the highest ranked country in Africa for energy regulation. Its Electricity Sector Regulatory Commission (CRSE) played a key role in launching competitive tenders for independent power producers (IPPs) under the Scaling Solar initiative and has modernized tariff-setting mechanisms. It is currently

working on a project to harmonize tariffs through the elimination of disparities between urban and rural areas.

Historically, concessionaires in rural electrification have applied higher rates than those charged by state utility Senelec to its urban customers. The shortfall could be made up from an energy support fund. To this end, balancing affordability and commercial sustainability will be a test.

The challenges of regulating power markets in the region in a way that meets the requirements of all stakeholders are illustrated by recent decisions of Ghana's Public Utilities Regulatory Commission (PURC). In January 2025 it published a report on the validation of Electricity Company of Ghana (ECG)'s accounts, warning that inefficiencies at the distribution company were impacting its ability to pay independent power producers. It recommended changes to the Cash Waterfall Mechanism (CWM), established in 2023 to allocate revenue collected from the regulated electricity market equitably and transparently.

The aim of the CWM is to underpin the financial sustainability of the electricity value chain. It was introduced to address concerns about the viability of entities in the sector, which continued to be weak despite substantial tariff increases in previous years. In May, PURC increased average end-user electricity tariffs by a further 14.75%.

This increased the tariff of residential 'Lifeline' customers – those who use the least amount of power – from USD0.0431/kWh to USD0.0495/kWh. There are nine other tariffs for other categories of consumers. The highest tariff, applicable to high voltage mining offtakers, increased from USD0.275/kWh to 0.316/kWh. The decision was opposed by labor unions and other groups concerned about its impact on the standard of living.

Ghana is ranked 11th in the Africa-wide ERI and is the fifth highest ranked country in WAPP. Its relatively high performance is based on the implementation of cost-reflective tariffs and performance-based incentives. Its recent experience shows that this is not easy.

Nevertheless, across the region, similar reforms are underway. In 2024, World Bank and EU started work to support institutional separation of utility and regulatory functions in

Guinea-Bissau, one of the WAPP countries that does not participate in the ERI since it has not yet established a regulatory entity.

Reforms also continued in Nigeria, where the 2023 Electricity Act enabled Nigerian Electricity Regulatory Commission (NERC) to decentralize regulatory powers to subnational regulators.

Also in 2024, Sierra Leone's Electricity and Water Regulatory Commission (SLEWRC) started a public consultation on revising the national electricity law and the establishment of a regional office in Kenema to strengthen oversight of service providers.

In 2023, Mali's Electricity and Water Regulatory Commission (CREE) introduced measures to align domestic tariffs with regional standards and to prepare the national grid for cross-border electricity integration. CREE also plays an active role in power-sharing negotiations within the OMVS framework.

In the same year, Burkina Faso's Electricity Sector Regulatory Authority (ARSE) updated technical standards and revised access charges for new power generation companies. Côte d'Ivoire's National Electricity Sector Regulatory Authority (ANARE-CI) also facilitated new private generation contracts aligned with regional power market rules.

In 2022, Gambia's Public Utilities Regulatory Authority (PURA) introduced service standards and began formulating a regulatory framework for off-grid and mini-grid energy providers. Niger's Energy Sector Regulatory Authority (ARSE) carried out similar reforms focused on rural electrification, mini-grids and tariff transparency. This followed a 2021 presidential decree setting out the regulator's attributes, organization and functions. This decree followed the 2020 revision of the law under which it was established. Even before these changes, the regulator was publishing its decisions on its website.

In 2022, Guinea's Electricity and Water Regulatory Authority (AREE) launched tariff reform efforts, with a particular focus on large hydropower assets. Recent reforms at Togo's Electricity Sector Regulatory Authority (ARSE) have focused on aligning tariff structures with cost-recovery objectives and partnering with the European Union to scale up grid-connected solar energy projects. The AfDB, through support from the Fund for African Private Sector Assistance (FAPA), is also supporting AREE in the development of a database management system to automate regulatory processes and strengthen the

monitoring, reporting, and analysis of utility performance and regulatory compliance. Benin is implementing a restructuring of electricity tariffs and measures to expand access to renewable energy.

Impacts of reform and market evolution

These reforms are beginning to bear fruit. Guinea where AREE is now directly attached to the Presidency – a sign of its growing political importance – has begun exporting electricity via the Organisation pour la Mise en Valeur du fleuve Gambie (OMVG) interconnection to Senegal and Mali, this has been made possible thanks to the collaboration of electricity regulator, alongside the national utility EDG (Electricité de Guinée) that continue to plays a critical role in supporting regional electricity trade. In Liberia, new distribution agreements and rural electrification efforts are enabling the CLSG line to reach new areas. Even as internal grid weaknesses persist, these efforts are laying the groundwork for effective regional trade.

Guinea's role in the OMVG, which is linked to the Transco CLSG transmission network at the strategic Linsan substation in the north-west of the country, highlights its significant potential as a regional electricity exporter. The connection enables Guinea to supply electricity to Mali, Senegal, Gambia, Guinea Bissau and Mauritania, leveraging its abundant hydropower resources. Guinean energy observers note that such transnational interconnections underpin WAPP's goal of energy security and regional market integration.

However, the success of this export potential is mostly dependent on the presence of robust regulatory frameworks – and Guinea is the lowest ranked of any WAPP respondent to the ERI survey.

Many countries involved in cross-border power exchanges still experience regulatory gaps that impede efficient market operation, tariff harmonization, and dispute resolution. Strengthening electricity regulation, especially in countries where it remains underdeveloped, is therefore critical to unlocking the full benefits of regional power trade, ensuring transparent, reliable, and sustainable electricity flows across West Africa.

Ensuring WAPP's Promise Through Regulatory and Institutional Reform

WAPP's evolution from a donor-driven infrastructure program to a rules-based electricity market marks a turning point. The West Africa Regional Electricity Market Program (WA-REMP), backed by the World Bank and other partners, aims to inject \$1.6 billion to strengthen regional generation, expand access, and support market institutions. Regional trading contracts are already emerging, particularly for seasonal hydropower exchanges between Guinea, Mali, and Senegal.

Yet there are challenges ahead. The sustainability of WAPP's reforms depends on improving the financial solvency of national utilities, accelerating internal transmission upgrades, and depoliticizing cross-border energy governance. The lessons of underused infrastructure — like the CLSG line — should also be considered when planning future projects. Market design, investment discipline, and credible dispute resolution mechanisms will be critical in determining the effectiveness and sustainability of WAPP's market framework.

As the region prepares for WAPP's market launch in 2026, there is a sense of urgency to resolve regulatory misalignments, strengthen utility governance, and complete critical domestic projects. To this end, the next two years will present significant opportunities for WAPP to become a catalyst for continental energy integration.

Case study – regional power trade and interconnections,

Better interconnections and functional trading rules will support the development of strategic generation projects and secure power for major new offtakers. For instance, the completion of the 225kV, 1,304km Transco CSLG line in December 2024 has allowed cross-border trading to start at a low level. Liberia is reported to have doubled imports from Côte d'Ivoire to 50MW, and Guinea is also dispatching power into the network via the Nzérékoré substation in the south-east of the country.

The importance of the Nzérékoré hub will increase once the 714km, 225kV Projet d'Interconnexion Électrique Guinée Mali (PIEGM) is commissioned. This line is likely to provide power to the \$23bn Simandou iron ore project. While the Guinean PIEGM side is expected to be completed in 2026, progress on the Malian side has been slowed by insecurity.

Likewise, the OMVG's 128MW Sambangalou HEP plant on the Senegal-Guinea border is a benchmark cross-border generation project in the WAPP region. Construction has been set back by landslides, but the contractor, a Vinci–Andritz consortium, set out a new plan in 2025, with progress over one-third complete. Once commissioned, Senegal will take 48% of production, Guinea 20%, Guinea Bissau 18% and Gambia 14%.

Sambangalou is part of a larger OMVG scheme which includes an interconnecting power grid with the Kaleta dam in Guinea. It is also one of the Economic Community of West African States 47 short-to-medium-term priority projects included in its Master Plan for the Development of Regional Power Generation and Transmission Infrastructure. The programme entails investment of around \$36.39bn and construction of 23,000km of transmission lines.