

»» Project Information

Energy – West Africa

Energy transition from Senegal to Nigeria

Access to energy services is a basic pre-requisite for economic development and poverty reduction in West Africa. It is for this reason that the West African nations founded the West African Power Pool (WAPP) in 2006, which aims to create an efficient and effective regional grid infrastructure and expand power generation capacity. On behalf of the German Federal Government, KfW is supporting WAPP by offering a variety of financing options to the national power companies. This support will focus on work to expand international transmission lines, large hydropower stations and solar power systems. This can help to significantly improve supply reliability in the region, which will have positive effects far beyond the energy sector.

Current situation

Less than one third of the population in the ECOWAS countries (Economic Community of West African States) has access to electricity. The problem will be further exacerbated in the years to come as a result of strong population growth. This is due to have disastrous consequences for both people and the environment, as wood, diesel generators and kerosene lamps are the primary means used to ensure the necessary supply of power. Deforestation harms the environment, while the generators are noisy, dirty and very costly; every year, billions of dollars are spent on importing diesel – money that these countries urgently need for other goods. The poor grid infrastructure is another problem. Around a quarter of electricity is lost after production and regional electricity trade is almost impossible. However, the ECOWAS countries' situation also offers them opportunities: they have great and cost-effective potential for wind, solar and hydroelectric power, as well

as natural gas. However, these opportunities are distributed very unevenly between the countries and the potential has not been unlocked to a sufficient extent. The challenge is to make this potential a reality. This requires capacity-building, as well as a shift from national to regional power supply with powerful and flexible grids.

Project approach

Given this state of affairs, the ECOWAS countries founded the West African Power Pool (WAPP) in 2006. WAPP's primary mission is to develop the regional electricity transmission grid and power exchange across borders. WAPP also aims to support efforts to expand power generation capacity. In addition to building conventional power plants, this includes a large number of wind and solar energy projects.

Project name	WAPP (West African Power Pool)
Commissioned by	Federal Ministry for Economic Cooperation and Development
Country/region	ECOWAS countries
Project partners	National electricity suppliers of each country





Mt. Coffee hydropower station and switchboard plant, Liberia.
Photographer: André Collin

The aim is for the countries to produce around 10% of their power from “new” renewable energy sources by 2025 (a category that does not include hydroelectric power). This would be equivalent to an installed capacity of around 800 MW. Hydroelectric power, which already makes up around 30% of electricity production, is also intended to undergo an expansion. To transport electricity from plant to consumer, the plan is for national electricity grids to be linked to an interconnected regional grid with WAPP’s assistance. This will improve supply reliability, allow for cross-border electricity markets, reduce dependence on imports of expensive fossil fuels and could compensate for fluctuations on the part of renewable energy sources. However, this will require major investments in renovating and expanding the grid infrastructure.

KfW is supporting WAPP on behalf of the Federal Government, financing capacity-building (especially in photovoltaic systems), along with the modernisation of existing hydropower plants. In addition, it is financing expansion of the grids across borders. Furthermore, KfW is promoting sectoral reforms with the long-term objective of ensuring balanced sectoral financing and rectifying energy suppliers’ institutional weaknesses. Important WAPP projects implemented with KfW support include the two 2-nation transmission lines (Ghana – Côte d’Ivoire and Togo – Benin) and the two 4-nation lines (Côte d’Ivoire – Sierra Leone – Liberia – Guinea and Senegal – Gambia – Guinea-Bissau – Guinea). There are also hydropower stations in Liberia and Togo, and photovoltaic systems in Côte d’Ivoire, Ghana, Senegal and Burkina Faso.

Impact

A transnational partnership of this nature requires trust

and close cooperation in a region that has been characterised by a large number of conflicts in recent years. The positive impacts of closer regional cooperation therefore extend far beyond electricity markets. WAPP also contributes to political and economic stability in West Africa through political dialogue and the pursuit of common goals and values. People also feel these effects: electricity markets boost the economy, creating more employment and in turn offering people opportunities locally. A positive political and economic climate creates investment incentives and planning security for the private sector.

These impacts are not only visible at a regional level, but also internationally. For instance, WAPP promotes implementation of the UN Sustainable Development Goals (SDGs), directly helping to lower CO₂ emissions and in turn to achieve global climate goals by expanding renewable energy sources.

As a result, WAPP is much more than just a power pooling partnership – it is key to sustainable development in West Africa.



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