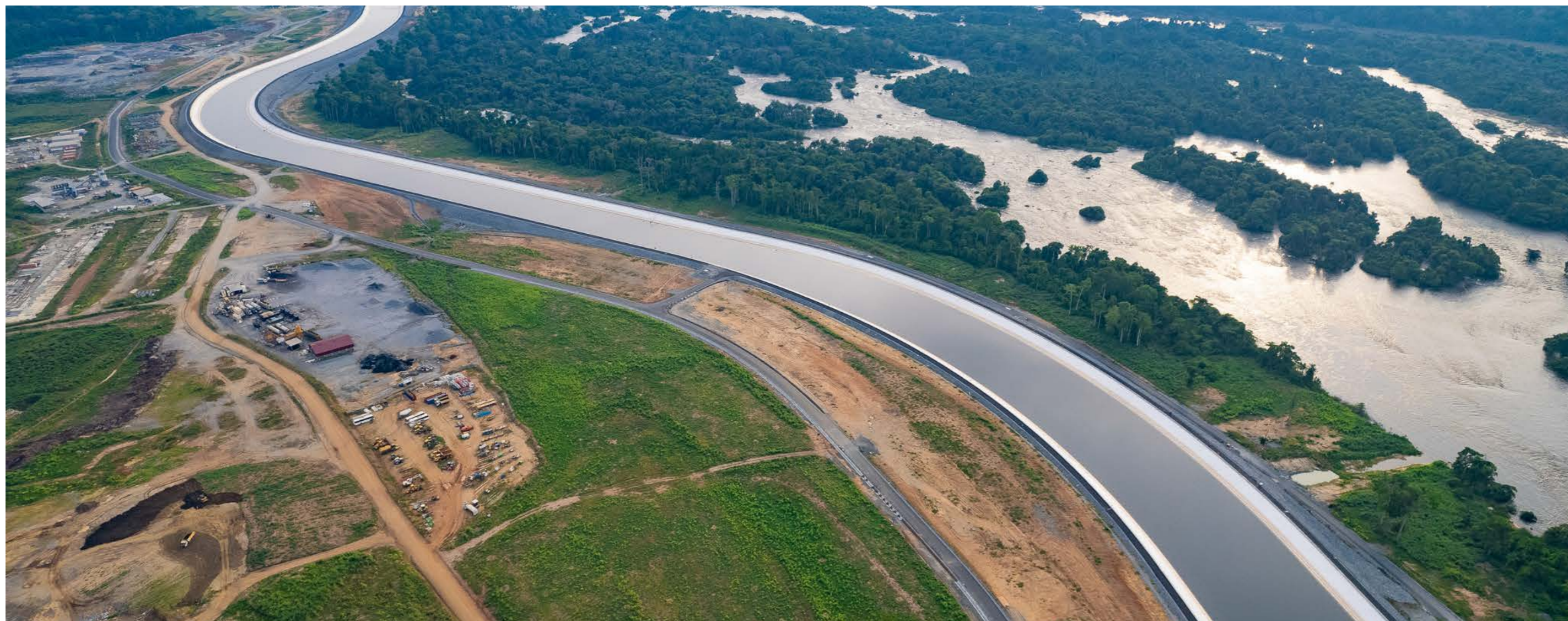


Nachtigal Hydropower Project

CAMEROON'S GREEN POWER GENERATION





NHPC

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Cameroon's Green Power Generation

RESEARCH BY **ABI ABAGUN**



As demand for electricity shifts from a population's 'want' to a people's 'right and need', the central African nation of Cameroon is firmly staying ahead of the curve. By the close of 2024, its Nachtigal Hydro Power Project will be in full service, providing 30% of the country's power.

The project - the most important Sub-Saharan Africa's public-private partnership under construction in the energy sector - will have a total installed capacity of 420 MW driven by seven generators with an electric power unit of 60 MW. It lies at the heart of a vibrant and forward-looking French and English-speaking population of about 30 million people

Renowned as 'Africa in Miniature' due to its geographical variety of desert plains to the north and tropical rainforests in the south, Cameroon is also a country undergoing major transformation with multi-million-dollar infrastructure programs.

One of the most important is Nachtigal. The facility achieved a significant

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milestone in June 2024 by commissioning its first turbine unit, thus injecting 60MW to Cameroon's Southern Interconnected Grid.

Energy and Water Resources Minister Gaston Eloundou Essomba said the scheme represents a crucial step in Cameroon's efforts to enhance energy security, stimulate economic development, and foster regional cooperation in electricity production and distribution.

Additionally, plans to export electricity to neighbouring Chad by 2027 through the Cameroon-Chad Power Grid Interconnection Project will further demonstrate the potential for regional cooperation and economic benefits.

Milestones on the Road to Completion

Since its inception in 2016, NHPC has achieved significant milestones. Financial closure was secured by December 2018, paving the way for construction to begin in February 2019. Fast forward to May 2024, the project successfully injected its first megawatt-hour into the grid, and by June 2024, the first 60 MW unit was commissioned. The journey is ongoing, with the remaining units set to come online in the coming months.

At its peak, the project employed more than 3,500 workers, predominantly Cameroonians, emphasizing local involvement and capacity building. These efforts are not just about construction; they are about creating a sustainable



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ALUCAM, THE FUTURE OF "GREEN" ALUMINUM

Established on the banks of the Sanaga River since 1954, this undisputed leader of the Cameroonian industry has carved out a prominent position in the industrial landscape of Cameroon and Central Africa.

As from the very beginning, Alucam continues to work towards the emergence of a true aluminum sector at both the national and sub-regional levels. The company commands respect in its field of expertise through its unique know-how and constant customer satisfaction, offering a diverse and high-quality range of products (100% primary and secondary aluminum processing).

To ensure its continued presence in a dynamic and highly competitive industry, the management has made technological and industrial development its

guiding principle. This is reflected in the adoption of cutting-edge technologies, the latest of which (a modern pot regulation system) will boost production and significantly contribute to the decarbonization of its operations.

The company thus demonstrates its commitment to a carbon-free (CO2) aluminum industry, also by using clean (hydroelectric) energy and gradually complying with the Carbon Border Adjustment Mechanism (CBAM) requirements, which will be mandatory from January 2026. Alucam has recently joined the prestigious circle of "Green" aluminum producers by achieving its initial certification to the ASI (Aluminum Stewardship Initiative) Performance Standard.

and empowered community around the project site.

A Symphony of Partnerships
The Nachtigal project is a testament to the power of collaboration. The State of Cameroon is a key institutional partner, ensuring alignment with national goals. The financial structure includes shareholders such as EDF (40%), IFC (20%), the State of Cameroon (15%), Africa50 (15%), and STOA (10%), alongside a consortium of 15 lenders, including local banks.

Technical partners are integral to the project's success. Contractors manage construction across various domains, while EDF provides engineering oversight. Key partners like SONATREL, EDC, and

ENEO ensure seamless transmission and distribution of the generated power.

Like all major infrastructure projects, the Nachtigal Hydro Power Project has leveraged partnerships at all levels with both international and local entities that have the capacity and expertise to manage large-scale undertakings. Example of such contributors include BESIX, Elecnor Cameroun, SGS, Bouygues Energies & Services, Group Holcim's Cimencam, and Alucam just to mention a few.

SGS has provided essential inspection and certification services, ensuring compliance with international standards. BESIX has managed substantial civil engineering

The facility includes a 28 million m³ reservoir covering 421 hectares, a 1,380-meter long, 14-meter high main dam, a 3.3 km canal, and a plant with seven generating units producing 420 MW.

tasks, demonstrating their capability in large-scale construction.

Elecnor Cameroun has been responsible for handling the electrical infrastructure, ensuring that the project's power distribution is efficient and reliable.

Engineering Marvels and Innovations

Nachtigal's technical specifications are impressive. The facility includes a 28 million m³ reservoir covering 421 hectares, a 1,380-meter long, 14-meter high main dam, a 3.3 km canal, and a plant with seven generating units producing 420 MW. Additionally, the project features an energy evacuation substation and a 50 km

long 225 kV transmission line.

Innovations are at the heart of Nachtigal. Advanced technologies like high-tech beams for concrete laying and a labyrinth spillway on the main dam enhance efficiency and safety. These engineering marvels ensure that Nachtigal operates at the highest standards of hydraulic safety and performance.

Commitment to Sustainability and Social Responsibility

NHPC's commitment to environmental, social, and governance (ESG) principles is unwavering. Comprehensive environmental and social studies were conducted ahead



of construction, resulting in a detailed Environmental and Social Management Plan (ESMP). This plan includes compensatory measures for affected communities and environmental impacts.

Environmental protection strategies are robust, involving compensation for key species and continuous monitoring. The project also supports the Mpem and Djim National Park and implements an archaeological resource protection program, highlighting its dedication to preserving biodiversity and cultural heritage.

Economic and Social Impact

The socio-economic benefits of the Nachtigal project are far-reaching and multifaceted. The project has been a significant driver of job creation, providing employment to thousands of

Cameroonians during its construction phase. This has not only injected much-needed income into local economies but also facilitated skills transfer and capacity building among the local workforce.

Moreover, NHPC's commitment to improving local infrastructure is evident. The construction of 44 boreholes has provided clean water to over 10,000 residents in 27 villages, significantly improving their quality of life. Educational and healthcare facilities have also seen substantial investments. New classrooms and maternity wards have been built, while existing structures, like the main building of the Batchenga Medical Center, have been renovated. Health campaigns addressing issues such as ophthalmology and onchocerciasis have been initiated, further enhancing community well-being.

In the long term, the availability of reliable electricity will catalyze economic activities



With a project cost of approximately 1.2 billion (XAF 800 billion), the Nachtigal Hydro Power Project is a flagship Public-Private Partnership in Sub-Saharan Africa's energy sector



across various sectors. Industries, especially those in manufacturing and services, will benefit from the stable power supply, leading to increased productivity and economic growth. The project is expected to spur local businesses, attract foreign investment, and create a more conducive environment for entrepreneurship.

Overcoming Challenges

As with any major project, Nachtigal faced its share of challenges, each met with resilience and innovative solutions. The Covid-19 pandemic posed significant disruptions, particularly in international trade and the flow of goods and people. Despite these hurdles, construction never ceased, thanks to the adaptability and dedication of the NHPC team and their partners.

In addressing these challenges, NHPC leveraged strong institutional, financial, and technical partnerships. Strategies were implemented to ensure the health and safety of workers, maintain supply chains, and adapt work schedules to new realities. This unwavering commitment to

progress amidst adversity highlights the project's robust planning and management capabilities.

Financial Health and Future Prospects

With a project cost of approximately €1.2 billion (XAF 800 billion), the Nachtigal Hydro Power Project is a flagship Public-Private Partnership in Sub-Saharan Africa's energy sector. Rigorous financial oversight ensures the proper implementation of funds, contributing to the project's financial health and stability.

Looking ahead, NHPC aims to be a cornerstone in Cameroon's sustainable development, providing abundant and affordable electricity. Potential future expansions could further enhance the facility's capacity, reinforcing Cameroon's energy security and supporting long-term economic growth.

Conclusion: A Bright Future

The Nachtigal Hydro Power Project is more than an engineering feat; it's a symbol of hope and progress for Cameroon. By



providing reliable electricity and fostering sustainable development, Nachtigal is lighting up the future for millions of Cameroonians. The project's impact will reverberate across multiple industries—agriculture, manufacturing, healthcare, education, and more—driving economic growth and improving quality of life.

Industries such as manufacturing and services stand to gain immensely from a stable power supply, leading to increased productivity and economic resilience. The agricultural sector will benefit from improved storage and processing capabilities, reducing post-harvest losses and enhancing food security. In healthcare, reliable electricity will enable better medical services and equipment functionality, improving patient care.

Education facilities will also thrive with a dependable power supply, facilitating digital learning and better educational outcomes. Overall, the Nachtigal

Hydro Power Project is poised to be a transformative force, powering dreams, driving economic growth, and showcasing the transformative power of innovative energy solutions.

As Nachtigal reaches its full potential, it will not only meet 30% of Cameroon's electricity needs but also become a cornerstone of the nation's sustainable development, illuminating the path towards a brighter and more prosperous future for all Cameroonians.

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