



Infrastructure

420 MW OF CLEAN POWER FOR CAMEROON



1.5 km
LONG DAM

3.4 km
LONG CANAL

5 million
MAN-HOURS WITHOUT MAJOR INCIDENT

// Project details

NACHTIGAL HYDRO-ELECTRIC PROJECT

Location
Nachtigal, Cameroon

Client
Nachtigal Hydro Power Company

Contract type
Design & Build

Contract value
398 million euros

External partners
NGE, SGTm

NACHTIGAL HYDRO-ELECTRIC PROJECT, NACHTIGAL, CAMEROON

COVERING 30 % OF CAMEROON'S ENERGY NEEDS: THAT'S THE SCOPE OF THE NACHTIGAL HYDRO-ELECTRIC PROJECT. IT WILL PROVIDE A NEW SOURCE OF RELIABLE AND RENEWABLE ENERGY AND ACCELERATE THE COUNTRY'S AMBITIOUS DEVELOPMENT GOALS. TO THAT AIM, BESIX IS RESPONSIBLE FOR THE DESIGN AND BUILD OF A DAM AND A 420 MW PLANT VIA A PUBLIC-PRIVATE PARTNERSHIP. TO DELIVER THE ELECTRIFYING PROJECT, THE TEAM TAPS INTO A WIDE RANGE OF EXPERTISE AND SETS A COMMENDABLE AND INCLUSIVE EXAMPLE IN TERMS OF SAFETY.



THE PROJECT ENCOMPASSES 110 YEARS OF BESIX KNOWHOW AND MORE ON ONE SITE. IT'S EVERY ENGINEER'S DREAM TO BE PART OF IT. //

BRECHT INDEKEU, TECHNICAL OFFICE ENGINEER AT BESIX

SWITCHING ON CAMEROON'S HYDROPOWER

The Nachtigal amount hydropower project is developed by the Nachtigal Hydro Power Company (NHPC), Africa's largest public-private partnership in the energy. Its shareholders are EDF International, the State of Cameroon, the International Finance Corporation, STOA and AFRICA 50. The consortium awarded the civil works contract to a joint venture consisting of BESIX, French company NGE and Moroccan company SGTm. The facility will increase the country's power-generation capacity by nearly a third and exploit its vast hydropower potential.

KNOWLEDGE IS POWER

BESIX takes on the design and build of the Nachtigal dam. Located on the Sanaga river, some 65 kilometres north of Yaoundé, the project consists of a 1.5 km long and 14 m high dam, two spillways equipped with radial gates, a 3.4 km canal which deviates the Sanaga river with at end the water intake, penstocks and powerhouse which is equipped with seven 60 MW Francis turbines resulting in a total installed capacity of 420 MW.

To deliver this, a wide range of disciplines is needed. From earthworks and mining over producing regular and roller compacted concrete from excavated material, to constructing reinforced concrete and steel structures, to deviating water flows by building an array of long dikes and installing hydro-mechanical equipment and electric networks. "The project encompasses 110 years of BESIX knowhow and more on a 18 million m² stretch of unknown territory," summarises Brecht Indekeu, Technical Office Engineer at BESIX. "It's every engineer's dream to be part of it."

Remarkably among those disciplines, is the fact that the team built their own village on site. Indeed, down to the sewerage, waste management and water treatment installations: a true project within itself. It houses a military base, police station, bank, tennis and basketball courts, a gym, prayer room, minimarket, canteens, offices and a local market.

POWERED BY DIVERSITY

Cameroonians, Chileans, Belgians, French, Portuguese, Polish, Tunisian, Moroccan, Congolese, Senegalese, Serbian, Ivorian, etc. holding positions from site intendents to financial and QHSE positions: the project unites a most diverse team. Of the 1,500 employees in total (incl. expats, staff and blue-collar workers), 300 reside on site.

In addition, 65 % of the direct jobs during peak construction periods are sourced locally within a 65-km radius of the construction site.

"Each individual, from the blue to the white collar, plays a crucial role on the project. We have a very dedicated team that works extremely hard to develop new skills by training and coaching," explains Mathieu Dechamps, General Manager Business Unit International.

BE SAFE, A COMMON APPROACH

BESIX has introduced its behavior-based safety program, BE SAFE, on the project. It promotes the company's culture of safety by reinforcing and growing caring values and helping staff as well as subcontractors to work safely. "We do this by positively influencing behaviour at work through frequent and on the spot observations," explains Adil Kennouss, QHSE manager at BESIX. "A select group of people, the so-called ambassadors, give constructive feedback to their peers."

These safety efforts quickly bore fruit, as the team achieved 5 million man-hours without major incident in October 2020. The EDF International management visited the site to celebrate this successful milestone and confirmed the project was EDF's safest internationally!

"By the end of November 2020, the Ambassadors community counted 84 members including subcontractors. "After witnessing the success of BE SAFE, the client and other EPC's have requested to be part of it," Kennouss proudly shared. "We are therefore organising additional Ambassador training sessions in 2021, a great step in continuously improving safety and quality on site."