

# AIP Support to PIDA-PAP 2 Approved Transboundary and Hydropower Water Projects



The Programme for Infrastructure Development in Africa (PIDA) of the African Union is a continental strategic framework for infrastructure development in Africa. PIDA establishes a common vision, framework, and global partnership to put in place an inclusive, cost-effective, and sustainable regional infrastructure base to promote Africa's socio-economic development and integration into the global economy. Sixty-nine transboundary infrastructure projects have been prioritised and endorsed by Heads of State at the African Union Summit in February 2021 for the PIDA Priority Action Plan 2 (PIDA-PAP 2), and of these, 16 are water infrastructure projects and 9 are hydropower projects. The total financial requirements of for the water infrastructure projects is US\$9.08bn for 2021-2030, according to the PIDA Resource mobilization Strategy by the African Development Bank.

The African Union Development Agency (AUDA-NEPAD), Global Water Partnership (GWP), and partners are collaborating to support the implementation on PIDA Water Projects within the framework of the Continental Africa Water Investment Programme (AIP).

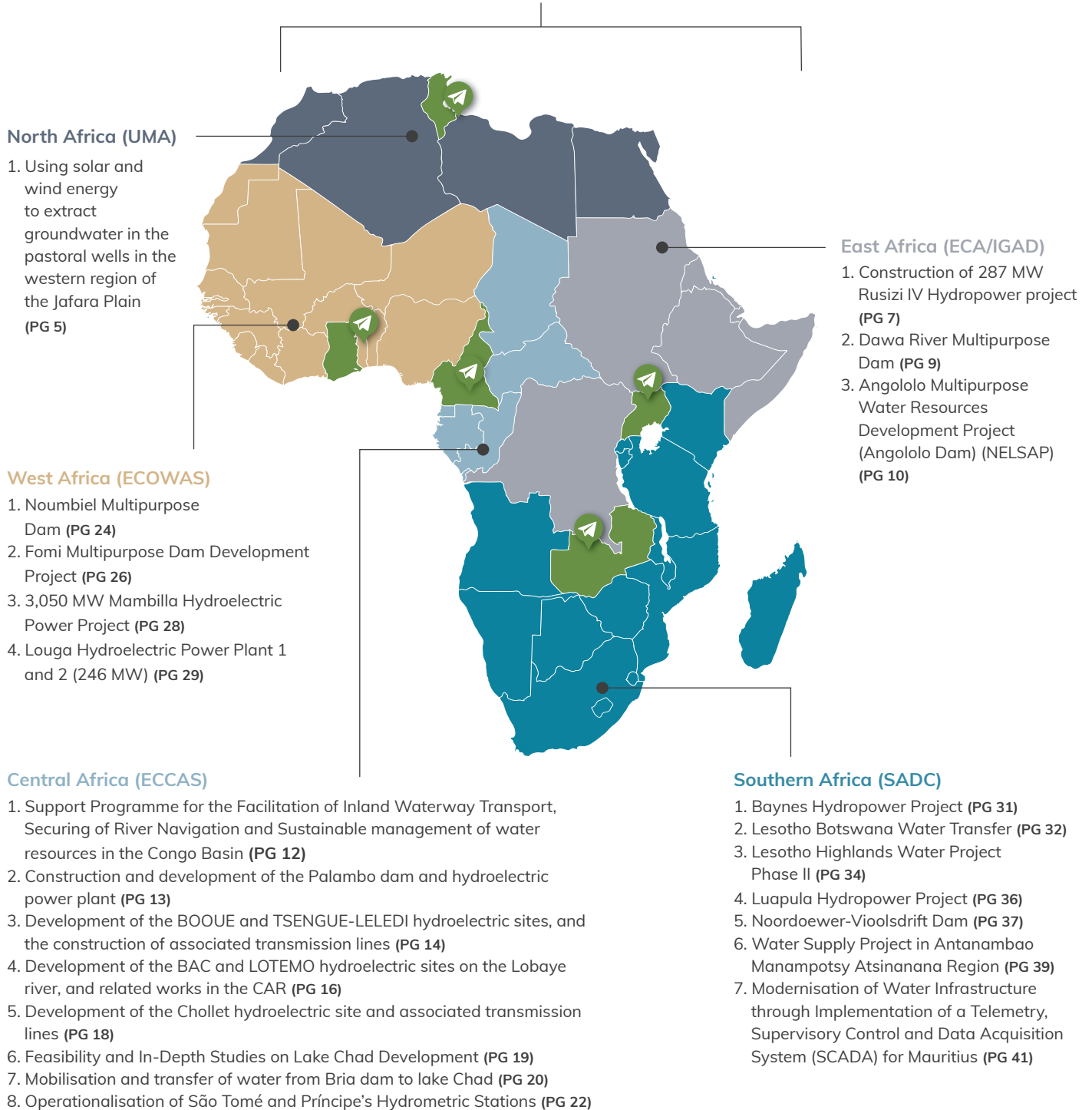
The goal of the AIP is to transform and improve the investment outlook for water security and sustainable sanitation for a prosperous, peaceful, and equitable society. The AIP aims to leverage US\$ 30 billion in climate resilient water investments by 2030 towards SDG 6 implementation; to enhance job creation through gender sensitive investments in water; and contribute to continental efforts towards industrialization and universal access to safe water, sanitation, hygiene, and for the integration of water security in Covid-19 economic recovery plans.

The objective of the AIP Resource Mobilisation Strategy for PIDA Water and Hydropower projects is therefore to address the investment gap for water infrastructure projects. This project brief outlines the current understanding of each of the 25 water and hydropower project contexts and resource requirements and is based on the information submitted with the PIDA-PAP 2 application.



## Multi-Region (AMU, COMESA, ECCAS, ECOWAS, IGAD, SADC)

1. Continental Africa Water Investment Support Program (AIP) on Transboundary Water Investment Projects: Integrated Transboundary And Regional Investments In Water-Health-Energy-Food Security (WHEF). (PG 1)
2. Grand INGA Phase 1 (PG 3)



# Arab Maghreb Union, Common Market for Eastern and Southern Africa, Economic Community of Central African States, Economic Community of West African States, Intergovernmental Authority on Development, Southern African Development Community



## Continental Africa Water Investment Support Program (AIP) on Transboundary Water Investment Projects: Integrated Transboundary And Regional Investments In Water-Health-Energy-Food Security (WHEF)

### PROJECT STAGE

S1 • Project Definition

### PROJECT STATUS

- **Financing:** The program requires funding support to support the number of sub-projects.
- **Project readiness:** The programme is under implementation

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	<ul style="list-style-type: none"> <li>• Benin: Ministry of Mines, Energy and Water; General Directorate of Water</li> <li>• Uganda: Ministry of Water and Environment; Directorate of Water Resources Management</li> <li>• SADC Water Fund hosted by the Development Bank of Southern Africa</li> <li>• Zambia: Ministry of Water Development, Sanitation and Environmental Protection; Department of Water Resources Development</li> <li>• Economic Community for Central African States (ECCAS)</li> <li>• African Ministers' Council on Water (AMCOW)</li> <li>• Global Water Partnership Southern Africa and Africa Coordination Unit (GWPSA-ACU)</li> </ul>
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Graham Chingambu; Programme Manager; SADC Water Fund; South Africa; Email: GrahamC@dbsa.org</li> <li>• Eng. Kenneth Nyundu; Director for Water Resources Development; Department of Water Resources development, Ministry of Water Development, Sanitation and Environmental Protection; Zambia; Email: kennethnyundu@gmail.com; flosika@yahoo.com</li> </ul>
<b>Regional Economic Community (REC)</b>	<ul style="list-style-type: none"> <li>• Arab Maghreb Union (AMU)</li> <li>• Economic Community of Central African States (ECCAS)</li> <li>• Southern Africa Development Community (SADC)</li> <li>• Economic Community of West African States (ECOWAS)</li> <li>• Intergovernmental Authority on Development (IGAD)</li> </ul>

<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Five pilot basins (Zambezi, Volta, Lake Chad, Kegera/Lake Victoria, and the North West Sahara Aquifer) in five pilot countries (Benin, Cameroon, Uganda, Tunisia, and Zambia)
<b>Estimated Total Project Cost</b>	<p>Total Project Financial Cost of the AIP covering all RECs is: US\$1.86 billion. This is broken down as follows:</p> <ul style="list-style-type: none"> <li>• ECOWAS – US\$1.531 billion</li> <li>• ECCAS – US\$2 million</li> <li>• IGAD – US\$20.850 million</li> <li>• UMA – US\$ 2.5 million</li> <li>• SADC – US\$300.4 million, including coordination costs of the Continental Programme, capacity development, stakeholder consultations, as well as mainstreaming water-health-energy-food security nexus, gender, and youth.</li> </ul> <p><b>Type and Quantum of funding required:</b> Estimated at US\$ 4.091 billion; with US\$ 10 billion investments leveraged by 2030 toward Agenda 2063 and SDG 6.</p>
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Large multi-dams and hydropower infrastructure linked to diverse economic activities. This is the flagship water infrastructure programme in Africa.
<b>Project Description &amp; Rationale</b>	<p>The AIP on Transboundary Water Investment Projects supports:</p> <ul style="list-style-type: none"> <li>• PIDA-PAP 2 projects;</li> <li>• Projects submitted as part of the AIP from Members States in all sub-regions of Africa, including Benin, Cameroon, Uganda, Tunisia, and Zambia; as well as regional institutions; and</li> <li>• Other projects identified by RECs as regional priorities.</li> </ul> <p>The project's main objective is to support the creation of an enabling environment for accelerated planning, preparation, and financing of transboundary and regional water-health-energy-food nexus projects that foster the integrated corridor approach for regional infrastructure development.</p> <p><b>Technical details:</b>  <b>Market:</b> The programme will support and benefit 550 million people  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	The first phase is scheduled for 2021-2025
<b>Completed Milestones</b>	A draft Resource Mobilisation Strategy for PIDA-PAP 2 water and hydropower projects has been developed.
<b>Project Insights</b>	The program is central for water infrastructure development and associated economic and social benefits for citizens.
<b>Estimated Commercial Operation Date</b>	Varies based on the different projects in the portfolio
<b>Proposed Commercial Model</b>	<p>Further information required</p> <p><b>Proposed Project Structure:</b> No information available</p>
<b>Implementation Strategy/Plan</b>	No information available



## Grand INGA Phase 1

### PROJECT STAGE

S3B • Transaction Support and Financial Close

### PROJECT STATUS

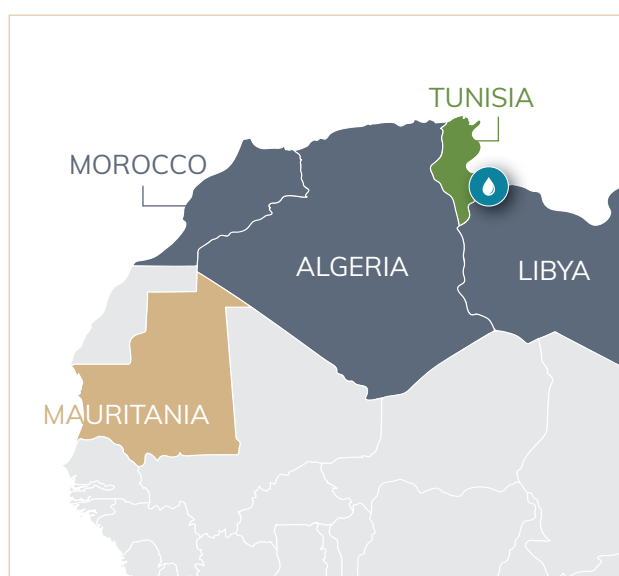
- **Financing:** The Project is in the African Development Bank pipeline, and a feasibility study was funded in 2010 leading to the process for selecting the preferred contractor for the first phase of the project. No progress has been reported in this regard and momentum should be created to move this forward.
- **Project readiness:** The project needs to move to the next step of selection of contractors and mobilising finance towards implementation.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Agency for the Development and Promotion of the GRAND INGA Project (ADPI-DRC)
<b>Contact Details</b>	Mr. Rolly Binama Tshingana; Email: binamarolly175@gmail.com; rolybinama@yahoo.fr
<b>Regional Economic Community (REC)</b>	<ul style="list-style-type: none"> <li>• Common Market for Eastern and Southern Africa (COMESA)</li> <li>• Economic Community of Central African States (ECCAS)</li> <li>• Southern Africa Development Community (SADC)</li> </ul>
<b>Sector</b>	Hydro-Generation
<b>Project Location</b>	Congo Central
<b>Estimated Total Project Cost</b>	<p>The estimated cost of the INGA 3 project is US\$ 12 billion for production infrastructure and US\$ 2 billion to US\$ 3 billion for transportation infrastructure.</p> <p><b>Type and Quantum of funding required:</b> +/- US\$14-15 billion (no further information provided)</p>
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	44,000 MW hydropower plant; Fall height: 150m over a distance of 8 km; Smart lines; Water intake; transfer channel; dam on the Bundi River and dam on the Congo River
<b>Project Description &amp; Rationale</b>	<p>Project for the interconnection of Africa in Electricity from the Hydroelectric Power Station of GRAND INGA with the axes: North axis; South axis (East corridor); South axis (West corridor); West axis.</p> <p>The project aims to double the population's access to electricity and drinking water and ensure the supply of electricity for the industrialization of the country and Africa. The project is responding to:</p> <ul style="list-style-type: none"> <li>• Industrialization of the DRC and Africa;</li> <li>• An opportunity to intensify regional and international integration and cooperation; and</li> <li>• The need to create jobs, increase incomes, and protect forests.</li> </ul>

<b>Project Description &amp; Rationale (continued)</b>	<p><b>Technical details:</b> Smart lines (further information required)</p> <p><b>Market:</b> The project will serve all of Africa (no quantum of market provided)</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 1974: Scheme for the development of the INGA site initiated.</li> <li>• 2010: Feasibility study by Aecom (USA) and EDF (France).</li> <li>• 2010: The process of selecting a private development partner for the first phase of the project by Orrick Rambaud Martel, Banque Lazard Frères, and Tractebel.</li> </ul>
<b>Completed Milestones</b>	Environmental and Social Impact Assessment (ESIA), INGA site development study, demand analysis, institutional and financial structuring of the project, lines studied, and developer selection process have been completed.
<b>Project Insights</b>	The INGA Project needs investment support from the investors, and cooperation from the beneficiary countries and RECs. An opportunity is being given to bankers, industrialists, and various national and international companies to invest in it. The project has capacity to provide power to up to 500 million people in Africa.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	<p>Not specified</p> <p><b>Proposed Project Structure:</b> No information available</p>
<b>Implementation Strategy/Plan</b>	No information available

# Arab Maghreb Union



Using solar and wind energy to extract groundwater in the pastoral wells in the western region of the Jafara Plain

## PROJECT STAGE

S1 • Project Definition

## PROJECT STATUS

- **Financing:** No further information available
- **Project readiness:** Project definition stage, cooperation between the States is important to move the project to the next stage

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	General Water Resources Authority (GWRA)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr Aissa Hlaimi, Coordinator of the NWSAS/CM, NWSAS/SASS consultation mechanism, Tunisia; E-mail: aissa.hlaimi@oss.org.tn; aissa_2503@yahoo.fr</li> <li>• Eng. Mukhtar Radi, National PIDA focal point in water sector (Libya), General Water Resources Authority, Libya; E-mail: mfradi2004@yahoo.com;</li> </ul>
<b>Regional Economic Community (REC)</b>	Arab Maghreb Union (AMU)
<b>Project Location</b>	Sahel Al-Jafara in north-western Libya
<b>Estimated Total Project Cost</b>	<ul style="list-style-type: none"> <li>• Approximately US\$ 0.4 million (actual costs will be determined by the Feasibility Study results)</li> <li>• Approximately US\$ 1 million for the study and the execution</li> </ul>
	Type and Quantum of funding required: No information available
<b>Funding Strategy/ Plan</b>	No information available
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Solar and wind energy pump installation for 15 pastoral wells; fencing forest areas around wells
<b>Project Description &amp; Rationale</b>	Installing pumps on 15 pastoral wells in Sahel Al-Jafara in north-western Libya, to be operated by solar energy or wind energy for the purpose of watering animals and establishing forest areas around the Libyan-Tunisian borders. The forest areas will establish natural reserves for different animals, in addition to developing the area pastorally.

<b>Project Description &amp; Rationale (continued)</b>	<p>Renewable energy will contribute to the creation of pastoral areas, the provision of water for watering animals, the establishment of natural reserves for several types of wild animals, contribute to increasing the vegetation cover within the region, and resist climate change and desertification.</p> <hr/> <p><b>Technical details:</b> Solar and wind energy; the project requires technical advisory for the renewable energy study and support to mobilize resources.  <b>Market:</b> The project will benefit about 250,000 residents in the community.  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	No information available
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available <hr/> <b>Proposed Project Structure:</b> no information available
<b>Implementation Strategy/Plan</b>	No information available



# East African Community



## Construction of 287 MW Ruzizi IV Hydropower Project

### PROJECT STAGE

S2A • Pre-Feasibility

### PROJECT STATUS

- **Financing:** No further information available as the project is in the early stages.
- **Project readiness:** Project is at pre-feasibility stage and cooperation between the Member States is important to move the project to the next stage.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Rwanda Ministry of Infrastructure
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Cesar Niyonzima, Fossil Energy Senior Engineer, Ministry of Infrastructure, Rwanda; Email: niyocesa@gmail.com; cesar.niyonzima@mininfra.gov.rw</li> <li>• Mr. Nikaenzi Gaethan, Inspecteur Principal de l'Energie, Ministere de l'hydraulique, de l'Energie et des Mines, Burundi; Email: nizic2002@yahoo.fr</li> </ul>
<b>Regional Economic Community (REC)</b>	East African Community (EAC)
<b>Sector</b>	Energy
<b>Project Location</b>	The power station is located on the Ruzizi River, straddling the common border between Rwanda and the Democratic Republic of the Congo (DRC).
<b>Estimated Total Project Cost</b>	US\$ 712 million
	<b>Type and Quantum of funding required:</b> no information available
<b>Funding Strategy/ Plan</b>	No information available
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Hydropower
<b>Project Description &amp; Rationale</b>	The power plant will be located on Ruzizi River, straddling the border between Rwanda and the DRC. Its location is approximately 5 kilometres, as the crow flies, west of the town of Bugarama, in Rusizi District, in Rwanda's Western Province.

<b>Project Description &amp; Rationale (continued)</b>	<p>The project is a regional project that will serve to connect Rwanda, Burundi, and the DRC. The project will provide electricity to millions of households, as well as small and medium-sized enterprises and industries, thereby improving the living conditions of the regional population.</p> <hr/> <p><b>Technical details:</b> Hydro, 287 MW (no further information available)  <b>Market:</b> Millions of households will be connected as well as small and medium-sized enterprises and industries (no quantum was provided).  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	No information available
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available <b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available

# Intergovernmental Authority on Development (IGAD)



## Dawa River Multi-Purpose Dam

### PROJECT STAGE

S1 • Project Definition

### PROJECT STATUS

- **Financing:** The project is in the early stages and will require definition and quantification of pre-feasibility and feasibility studies.
- **Project readiness:** The project needs to move to the next step which requires cooperation from the riparian Member States.

### PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Ministry of Energy and Water Resources (Somalia); Ministry of Water, Irrigation, and Energy (Ethiopia); Ministry of Water and Sanitation (Kenya)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Ms. Eunice Mugeru, Deputy Director Transboundary Waters, Ministry of Water, Sanitation, and Irrigation; Kenya; Email: eunicemugeru@yahoo.com</li> <li>• Eng. Ahmed Mohamed, Director – Hydrometrology, Ministry of Energy and Water Resources, Email: kurweyne200@gmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	Intergovernmental Authority on Development (IGAD)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	River Dawa at latitude 4.064824 and longitude 41.043819
<b>Estimated Total Project Cost</b>	The estimated cost of the project is US\$ 634 million
	<b>Type and Quantum of funding required:</b> Not specified.
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Proposed dam height is about 90m with a capacity of approximately 4.5 billion m <sup>3</sup> and can be utilised to generate 8.2 MW of hydropower.
<b>Project Description &amp; Rationale</b>	The project area is characterized by food insecurity, mainly due to water insecurity, which leads to limited overall opportunities for improving the socioeconomic condition of the communities. The Dawa multi-purpose dam project is intended to offer the residents of the basin a platform to jointly conserve the environment while utilizing the water resources and other biodiversity benefits of the basin.

<b>Project Description &amp; Rationale (continued)</b>	<p>Hydropower will provide energy to power processing of agricultural outputs for the much needed value addition in the agricultural sector. Through the resultant agro-industries, farm by-products will offer much-needed hay for the animals, thus ensuring the community enhances resilience to the climatic challenges of droughts and floods. The objective of the project is therefore to come up with a multipurpose dam providing water for hydropower generation, irrigation, human, and livestock water supply. The project will also contribute to mitigating floods and droughts, improving catchment management, and enhancing data management.</p> <p><b>Technical details:</b> 4.5 billion m<sup>3</sup> of water; and generation of 8.2 MW of hydropower  <b>Market:</b> 20 million  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	No information available.
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	No information available
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Angololo Multipurpose Water Resources Development Project (Angololo Dam) NELSAP

### PROJECT STAGE

S2B • Feasibility

### PROJECT STATUS

- **Financing:** The project is at the feasibility stage and will require funding from Member States and partners to move forward.
- **Project readiness:** The project needs to move to the next step which requires cooperation from the riparian Member States.

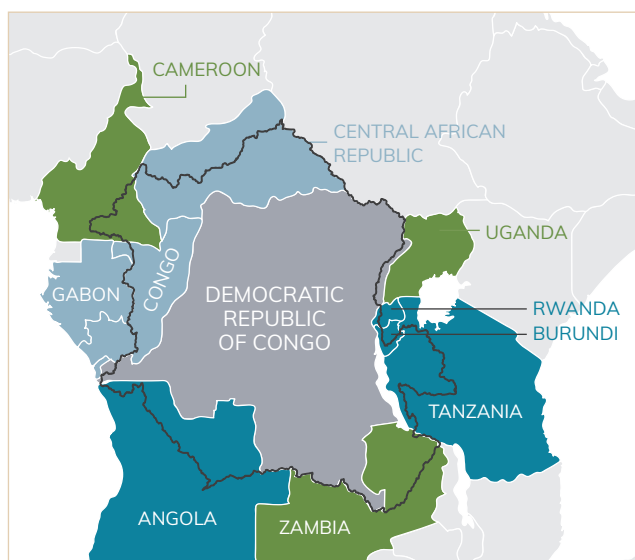
## PROJECT INFORMATION

### Project Sponsors/Owners

- Kenyan Ministry of Water and Irrigation
- Ugandan Ministry of Water and Environment
- Ugandan Ministry of Agriculture, Animal Industry and Fisheries
- In collaboration with the Nile Equatorial Lakes Subsidiary Action Program/ Sio–Malaba–Malakisi (SMM) River Basin Management Project

<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Ms. Gladys Wekesa, Director Transboundary Waters, Ministry of Water, Sanitation and Irrigation, Kenya; Email: gnwekesa@yahoo.com</li> <li>• Mr. Jackson Twinomujuni, Commissioner Transboundary Waters, Ministry of Water and Environment, Uganda, E-mail: jk.twinomujuni@gmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	EAC - Intergovernmental Authority on Development (IGAD)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	The Angololo dam is located at Kalait village, at the border of Uganda and Kenya.
<b>Estimated Total Project Cost</b>	US\$ 61.7 million as of 2020
	<b>Type and Quantum of funding required:</b> Not specified.
<b>Funding Strategy/ Plan</b>	No information available
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	The project consists of a proposed 30m high dam with a reservoir capacity of 43.0 MCM; potable water supply to 20,000 people; the capacity to irrigate 3,300 Ha (1,180 Ha in Kenya and 2,120 Ha in Uganda); generation capacity of 1.75 MW of hydropower.
<b>Project Description &amp; Rationale</b>	<p>The Angololo project was identified by Kenya and Uganda in collaboration with the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) through its Sio Malaba Malakisi (SMM) River Basin Management (RBM) project.</p> <p>The objectives of the proposed Angololo project studies are to assess the potential and viability for multipurpose water resources development in irrigated agriculture, hydropower generation, livestock development, water supply, flood control, drought mitigation, aquaculture, and the restoration of the associated sub-catchments.</p> <p><b>Market:</b> The project will benefit 127,300 people  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 2010: NELSAP-CU conducted its pre-feasibility studies with grant financing from the Royal Government of Sweden and the Royal Government of Norway.</li> <li>• 2015: The project was approved during the 18th Nile Equatorial Lakes Council of Ministers (NELCOM) meeting and was included into the African Development Bank pipeline.</li> </ul>
<b>Completed Milestones</b>	<ul style="list-style-type: none"> <li>• Feasibility studies</li> </ul>
<b>Project Insights</b>	<ul style="list-style-type: none"> <li>• The Project will supply potable water to 20,000 people and irrigate 3,300 Ha (1,180 Ha in Kenya and 2,120 Ha in Uganda). The dam will generate 1.75 MW of hydropower.</li> </ul>
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available

# Economic Community of Central African States



Support Programme for the Facilitation of Inland Waterway Transport, Securing of River Navigation and Sustainable management of water resources in the Congo Basin

## PROJECT STAGE

S0 • Enabling Environment and Needs Assessment

## PROJECT STATUS

- **Financing:** No information available
- **Project readiness:** Early stages and cooperation by Member States and partners needed to take the project forward.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Commission Internationale Du Bassin Congo - Oubangui Sangha (CICOS)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Désiré Arman Ndemazagoa Backotta, Head of Water and Energy Department, CEEAC, Gabon; Email: dndemazagoa@yahoo.fr; dndemaz@gmail.com</li> <li>• Mr. Aboubakar Halilou, Head of Information, Communication and Education Department, CICOS, Democratic Republic of Congo; Email: ahalilou@yahoo.fr</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of Central African States (ECCAS)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Congo basin
<b>Estimated Total Project Cost</b>	<p>US\$ 48 million</p> <p><b>Type and Quantum of funding required:</b> US\$ 34 million for hard infrastructure and US\$ 14 million for soft infrastructure</p>
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	At least 15,000 km of waterways (smart lines, observatories, landing stages, hydro-climatological stations, etc.)
<b>Project Description &amp; Rationale</b>	This project will contribute towards the facilitation of trade on the internal waterways of the Congo Basin and the Ogooue River in order to facilitate the integration of the Central Africa sub-region. The project will also result in the improvement of integrated management and sustainable use of water resources in the basin.

<b>Project Description &amp; Rationale (continued)</b>	This waterway is an important link in the multimodal transport chain and interconnection of the various transport corridors in Central Africa.
	<b>Technical details:</b> Smart lines <b>Market:</b> 80 million people will benefit from the project <b>Legal:</b> No information available <b>Regulatory:</b> No information available
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	No information available
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Construction of Palambo Dam and Development of the Palambo Hydroelectric Plant

### PROJECT STAGE

S2A • Pre-Feasibility

### PROJECT STATUS

- **Financing:** Project is in the early stages and cooperation is needed to mobilise funds for feasibility studies and next steps.
- **Project readiness:** Various studies need to be finalised.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Economic Community of Central African States (ECCAS) and the Ministries in charge of energy of its Member States
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Désiré Arman Ndemazagoa Backotta, Chef Service Eau et Energie, CEEAC, Gabon; Email: dndemazagoa@yahoo.fr; dndemaz@gmail.com</li> <li>• Eng. Jean Koutele, Expert en energie, CEEAC, Gabon; E-mail: jkoutele@gmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	ECCAS
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Palambo in the Central African Republic (CAR)

<b>Estimated Total Project Cost</b>	US\$ 3 million
	<b>Type and Quantum of funding required:</b> Information required
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Smart lines; Storage volume: 2,370 million m <sup>3</sup> ; Power: 30 MW
<b>Project Description &amp; Rationale</b>	The project will address interruption of navigation on the Oubangui and the Congo rivers, during low-flow periods, and will secure the supply of electricity to the CAR, North Congo rivers, and the DRC. This will be done through the construction of a dam on the Palambo site to regulate the flow of the Oubangui and generate electricity.
	<b>Technical details:</b> Smart lines. <b>Market:</b> No information available <b>Legal:</b> No information available <b>Regulatory:</b> No information available
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	Cooperation by the Member States is required to proceed towards project feasibility studies and next steps.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Development of the Booue and Tsengue-Leledi Hydroelectric Sites, and the Construction of Associated Transmission Lines

### PROJECT STAGE

S3B • Transaction Support and Financial Close

### PROJECT STATUS

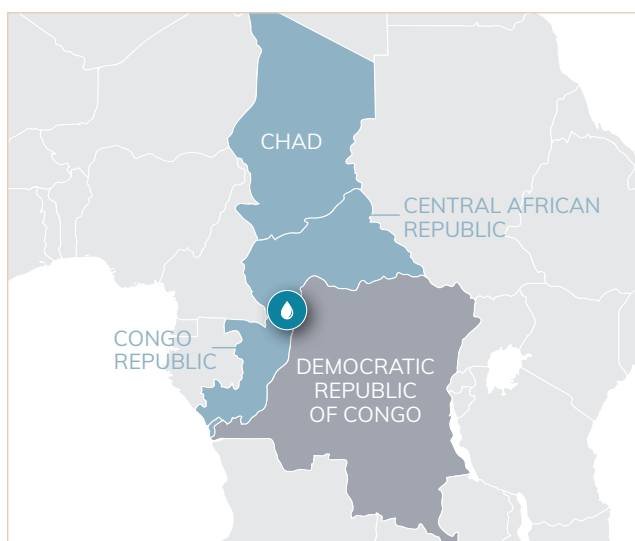
- **Financing:** Project obtained funding from the African Development Bank Group, including the NEPAD-Infrastructure Project Preparation Facility for, among other things, the preparation of investment projects.
- **Project readiness:** The Project is at an advanced stage and requires cooperation from Member States and partners for financial closure.



## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	<ul style="list-style-type: none"> <li>• Economic Community of Central African States (ECCAS)</li> <li>• Pool Energétique de l'Afrique Centrale (PEAC)</li> </ul>
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Jean Koutele, Consultant, Expert Energie, CEEAC, Gabon; Email: jkoutele@gmail.com</li> <li>• Eng. Désiré Arman Ndemazagoa Backotta, Chef Service Eau et Energie, CEEAC, Gabon; Email: dndemazagoa@yahoo.fr; dndemaz@gmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community for Central African States (ECCAS)
<b>Sector</b>	Energy
<b>Project Location</b>	Central Gabon
<b>Estimated Total Project Cost</b>	US \$1,784,109,000
	<b>Type and Quantum of funding required:</b> Information required
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Hydroelectric plant and Electricity Transmission Lines
<b>Project Description &amp; Rationale</b>	<p>The project aims to increase Gabon's energy production capacity and to interconnect the electricity networks with neighbouring states (Cameroon, Congo, Equatorial Guinea), to increase the rate of access to electricity for people in the four states concerned, and to promote regional integration through the following infrastructure:</p> <p>a) At the Booue site:</p> <ul style="list-style-type: none"> <li>• An intake dam, with characteristics: maximum height 26 m, length 593 m, retention slope 173, equipment flow rate 2,500 m<sup>3</sup>/s;</li> <li>• A supply channel; and</li> <li>• A plant equipped with five Kaplan-type groups and installed capacity of 411 MW.</li> </ul> <p>b) At the Tsengue-Leledi site:</p> <ul style="list-style-type: none"> <li>• A dam with characteristics: maximum height above the foundation 44 m; crown length 1282.6 m; retaining rib 240; equipment flow rate 700 m<sup>3</sup>/s;</li> <li>• Penstock 4; and</li> <li>• A power plant equipped with four Francis-type groups, with an installed capacity of 300 MW;</li> </ul> <p>c) Electricity transmission lines to border the states (Cameroon, Congo, Equatorial Guinea) which will be designed in 400 KW technologies and will constitute the links of the interconnection lines of the power grids of Central Africa. These transmission lines will supply the rural areas crossed directly by the High Voltage line or by interconnection lines with certain localities.</p> <p><b>Technical details:</b> Hydroelectricity and Electricity Transmission Lines  <b>Market:</b> Population of 25 million inhabitants will benefit from this project  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 2005: First Study of the Central Africa Master Scheme by PEAC</li> <li>• 2016: The EEAC requested and obtained funding from the African Development Bank Group, including NEPAD-Infrastructure Project Preparation Facility, for, among other things, the preparation of investment projects.</li> </ul>

<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	No information available
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Development of the BAC and LOTEMO Hydroelectric Sites on the Lobaye River, and Related Works in the Central African Republic

### PROJECT STAGE

S2B • Feasibility

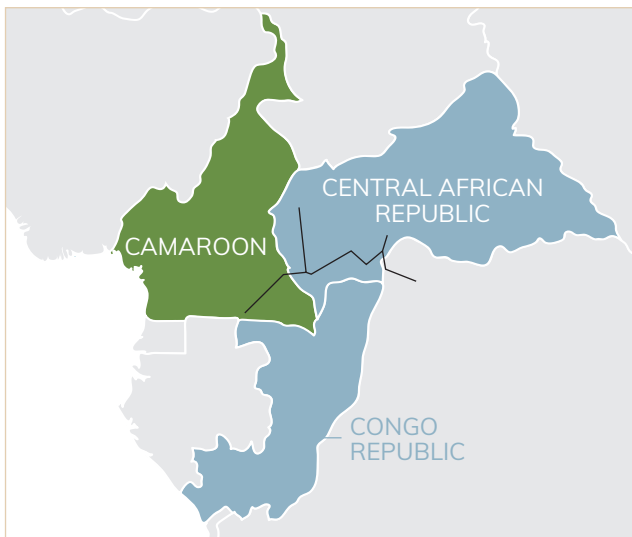
### PROJECT STATUS

- **Financing:**
- **Project readiness:**

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	<ul style="list-style-type: none"> <li>• Economic Community of Central African States (ECCAS)</li> <li>• Pool Energétique de l'Afrique Centrale (PEAC)</li> </ul>
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Jean Koutele, Consultant, Expert Energie, ECCAS, Gabon; Email: jkoutele@gmail.com</li> <li>• Eng. Désiré Arman Ndemazagoa Backotta, Chef Service Eau et Energie, ECCAS, Gabon; Email: dndemazagoa@yahoo.fr; dndemaz@gmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	ECCAS
<b>Sector</b>	Energy
<b>Project Location</b>	South of the Central African Republic (CAR): According to the Synohydro Feasibility Study, the coordinates of the Lobaye watershed are: longitude between 15-30' to 18-20' and latitude between 3-30' and 6-00'
<b>Estimated Total Project Cost</b>	<p>Total estimated cost: US\$ 360.4 - 408.5 million</p> <p><b>Type and Quantum of funding required:</b> US\$ 2 million for studies. Capex of US\$ 406.5 million if BAC and LOTEMO sites are developed sequentially, US\$ 358.4 million if the two sites are developed at the same time.</p>
<b>Funding Strategy/ Plan</b>	Not specified

<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Hydropower and Electricity transport lines
<b>Project Description &amp; Rationale</b>	<p>The production of hydroelectric power on the Lobaye will provide electricity for the city of Bangui and its surroundings, the border towns of the Democratic Republic of the Congo (DRC), and the Republic of the Congo. The specific objective is to achieve the following interconnection:</p> <p>a) For the CAR:</p> <ul style="list-style-type: none"> <li>• Interconnection with the Boali-Bangui system;</li> <li>• Interconnection with lines from Dimoli and Inga; and</li> <li>• Feeding the Prefecture of Mba-ki and the forestry and mining companies that are located there.</li> </ul> <p>b) For the Republic of Congo:</p> <ul style="list-style-type: none"> <li>• Feeding the cities of Ipfondo and Betou; and</li> <li>• Feeding the forestry societies established in the region.</li> </ul> <p>c) For the DRC:</p> <ul style="list-style-type: none"> <li>• Feeding the city of Libenge and its surroundings.</li> </ul> <p><b>Technical details:</b> Hydroelectricity and electricity transmission lines  <b>Market:</b> Populations of more than 6 million inhabitants  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 1992: CAR Production and Transport Director Plan, developed by Sogreah (now known as Artelia Group)</li> <li>• 2005: First Study of the Central Africa Director of the PEAC, funded by USAID</li> </ul>
<b>Completed Milestones</b>	Feasibility studies
<b>Project Insights</b>	The project will power the Information and Communications Technology services in the region and improve and strengthen the provision of safe drinking water in the area.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	<p>No information available</p> <p><b>Proposed Project Structure:</b> No information available</p>
<b>Implementation Strategy/Plan</b>	No information available



## Development of the Chollet Hydroelectric Site and Associated Transmission Lines

### PROJECT STAGE

S2B • Feasibility

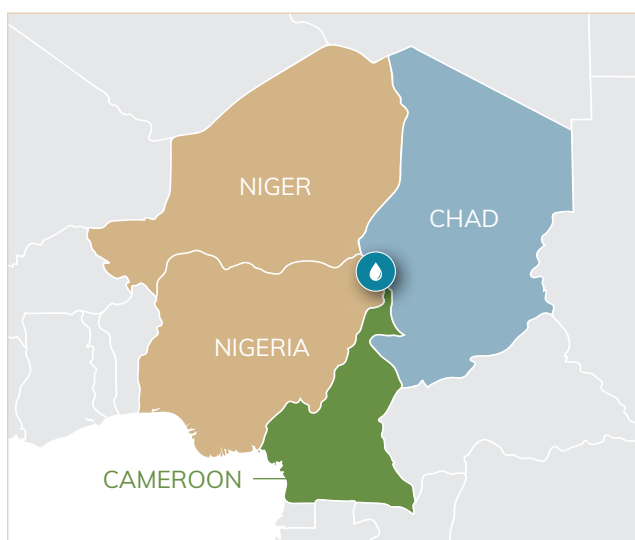
### PROJECT STATUS

- **Financing:**
- **Project readiness:**

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	<ul style="list-style-type: none"> <li>• Economic Community of Central African States (ECCAS)</li> <li>• Pool Énergétique de l'Afrique Centrale (PEAC)</li> </ul>
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Jean Koutele, Consultant, Expert Energie, CEEAC, Gabon; Email: jkoutele@gmail.com</li> <li>• Eng. Désiré Arman Ndemazagoa Backotta, Chef Service Eau et Energie, CEEAC, Gabon; Email: dndemazagoa@yahoo.fr;dndemaz@gmail.com</li> <li>• Monsieur Atadet Azarak Mogro, Assistant Technique (PEAC); Email: atadetazarak@yahoo.fr</li> </ul>
<b>Regional Economic Community (REC)</b>	ECCAS
<b>Sector</b>	Energy
<b>Project Location</b>	Chollet is located on the border between Cameroon and Congo
<b>Estimated Total Project Cost</b>	US\$ 2,009 million
	<b>Type and Quantum of funding required:</b> Type of funding not specified.
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Hydroelectric generation
<b>Project Description &amp; Rationale</b>	<p>The Project consists of the development of a hydroelectric plant with a power of 600 MW, and the construction of associated transmission lines to north Congo, south-east Cameroon, and south-west Central African Republic.</p> <p><b>Technical details:</b> Hydroelectric generation with installed capacity of 600 MW  <b>Market:</b> Population of over 6 million people will benefit  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 2004: Priority integrator project identified by PEAC</li> <li>• 2005: First Study of the Master Plan for Central Africa of the PEAC, funded by USAID</li> </ul>

<b>Completed Milestones</b>	Memorandum of Understanding for the interconnection studies of the electric networks between the Republic of Cameroon, the Central African Republic, and the Republic of Congo.
<b>Project Insights</b>	The project will power the region and improve access to clean energy to both industry and households in the riparian states and region.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available <b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Feasibility and In-Depth Studies on Lake Chad Development

### PROJECT STAGE

S1 • Project Definition

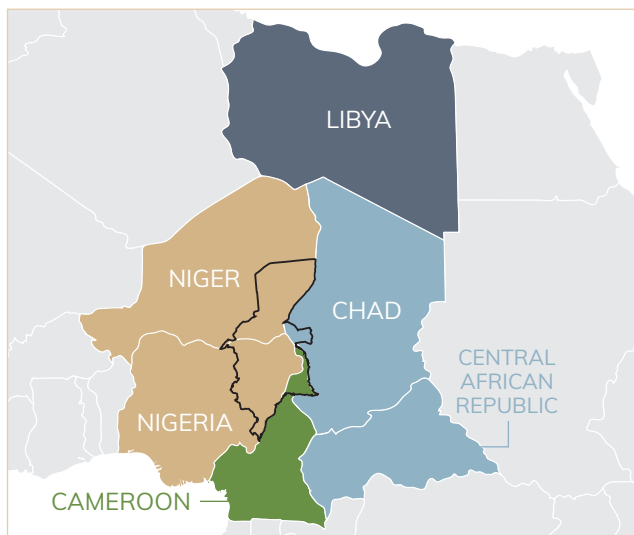
### PROJECT STATUS

- **Financing:** The project is in its early stages and requires cooperation and support by the project owners, partners, and financiers to take it to the next step.
- **Project readiness:** Project in early stages and still requires significant support to take it to the next step.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Lake Chad Basin Commission (LCBC)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Michel Dimbele-Kombe, Expert, Lake Chad Basin Commission, Chad; Email: mdimbelekombe@gmail.com, cbt.lcbc@gmail.com, cab@cbt.org, cbt_lcbc@yahoo.com</li> <li>• Ms. Amougou Mintsas; Experte Développement et Identification des Projets, Lake Chad Basin Commission, Chad; Email: m.mintsas@cbt.org</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of Central African States (ECCAS)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Chad, Cameroon, Niger, and Nigeria
<b>Estimated Total Project Cost</b>	EUR 18,4 million <b>Type and Quantum of funding required:</b> Type of funding not specified.
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available

<b>Infrastructure</b>	More information required
<b>Project Description &amp; Rationale</b>	<p>The drastic decrease in the availability of fresh water in the Lake Chad basin has resulted in a 95% decrease in the volume of the lake from 1963 to date. At the same time, the degradation of the Lake Chad ecosystem continues. The droughts of 1973-74 and 1985-86 led to an increase in the erosion of the watershed and the silting of Lake Chad and its main tributaries – the Chari and Logone Rivers.</p> <p>The general objective of this project is to conduct an in-depth study for the development of Lake Chad basin through:</p> <ul style="list-style-type: none"> <li>• Improving the hydraulicity of the Chari River in order to limit losses in the flood plains;</li> <li>• Developing Lake Chad and its main tributaries through dredging and sand removal to ensure a better distribution of water in the different basins of the lake; and</li> <li>• Restoring navigation, fishing, and irrigation along Lake Chad to alleviate poverty.</li> </ul> <p><b>Technical details:</b> Hydro-feasibility and detailed preliminary design of the Bria multifunctional dam; feasibility and detailed design of the water transfer corridor from the Bria/Kotto Dam to the Chari River; and feasibility, in-depth study, and detailed pre-project for the improvement of the hydraulicity of the Chari River.</p> <p><b>Market:</b> Population of 15 million people</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	2012: Heads of State and Government of the LCBC approved key measures as a means of improving the availability of water in the Chari River and the Lake Chad
<b>Completed Milestones</b>	Donor roundtable investment plan completed
<b>Project Insights</b>	The project will facilitate better navigation and improve livelihoods through fishing and irrigation interventions for the riparian communities.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Mobilization and Transfer of Water from the Bria Dam to Lake Chad

### PROJECT STAGE

S2A • Pre-Feasibility

### PROJECT STATUS

- **Financing:** The project is in early pre-feasibility stages and requires funding towards the next steps.
- **Project readiness:** No information available

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Lake Chad Basin Commission (LCBC)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Michel Dimbele-Kombe, Expert, Lake Chad Basin Commission, Chad; Email: mdimbelekombe@gmail.com, cblt.lcbc@gmail.com; cab@cblt.org; cblt_lcbc@yahoo.com</li> <li>• Miss. Amougou Mintsa; Experte Développement et Identification des Projets, Lake Chad Basin Commission, Chad; Email: m.mintsa@cblt.org</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of Central African States (ECCAS)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	From Bria/Kotto Dam to Lake Chad
<b>Estimated Total Project Cost</b>	EUR 23,4 million
	<b>Type and Quantum of funding required:</b> Type of funding not specified.
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Water transfer by gravity, Hydroelectric dam
<b>Project Description &amp; Rationale</b>	<p>This project seeks to identify possible solutions to improving the hydraulic capacity of the Chari River, to perform in-depth studies on their impacts, and proceed with the construction of several infrastructures. The proposed dam and water transfer corridor through the Bounbouy river (dam reservoir), the Ipendo river, the Ouaka river, two trenches to cross the inter-basin ridge, and a channel along the Koukourou and Bamingui Rivers before continuing towards the Chari River will develop a region of approximately 100,000 km<sup>2</sup> that is currently devoid of any type of road links and electricity.</p> <p><b>Technical details:</b> Water transfer by gravity, hydroelectric dam  <b>Market:</b> 110 million people  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 1964: Fort Lamy Convention (present N'Djamena) establishing the LCBC and its mandate</li> <li>• 1994: The Master Plan and the Lake Chad Basin Water Charter</li> <li>• 2011: Feasibility study for inter-basin water transfer from the Oubangui River to Lake Chad</li> <li>• 2013-2017: Five-Year Investment Plan</li> </ul>
<b>Completed Milestones</b>	Feasibility study for inter-basin water transfer from the Oubangui River to Lake Chad
<b>Project Insights</b>	The project holds the possibility for intensive integrated development of areas with high agricultural and livestock potential and the creation of a large specialized industrial zone.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Operationalisation of São Tomé and Príncipe's Hydrometric Stations

### PROJECT STAGE

S3A • Project Structuring

### PROJECT STATUS

- **Financing:** The project is in advanced stages of structuring and requires funding from financiers.
- **Project readiness:** No information available.

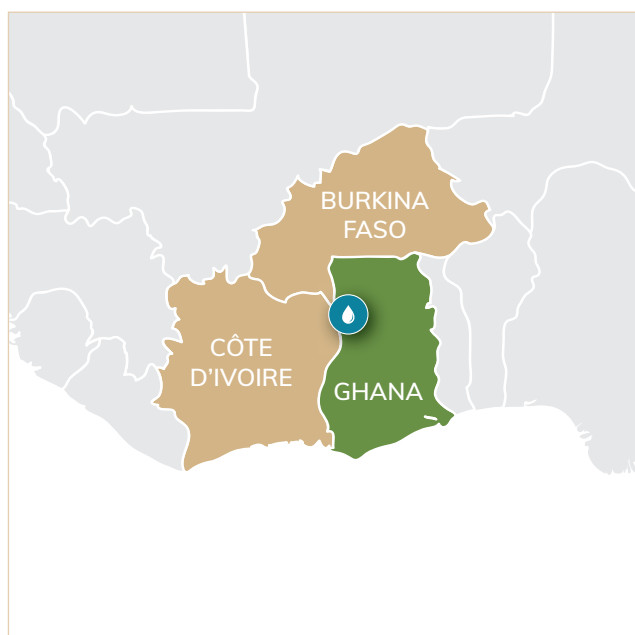
## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Directorate General for Natural Resources and Energy (DGRNE)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Jose Bastos Sacramento, General manager, Directorate of Natural Resources and Energy, Sao Tome and Principe; Email: jbastos81@hotmail.com; jbastos83@gmail.com</li> <li>• Eng. Chicher Pires Diogo, Director da Direção dos Recursos Hidrico (Água), Directorate of Natural Resources and Energy, Sao Tome and Principe; Email: chicherpires@hotmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of Central African States (ECCAS)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	In the 12 main river basins of the two islands of the country (São Tomé and Príncipe)
<b>Estimated Total Project Cost</b>	US\$ 1.5 million
	<b>Type and Quantum of funding required:</b> Type of funding not specified
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Acquire software for data processing; materials, equipment, and rolling media for monitoring stations; and developing an online hydrological portal
<b>Project Description &amp; Rationale</b>	<p>São Tomé and Príncipe has 12 automatic hydrometric stations, and the project aims to create resilience through the efficient operationalization of hydrometric stations for issuing alerts and managing river basins.</p> <p>The project rationale is to optimize and efficiently manage water resources to ensure sustainable use, protection, valuation of the resource, and provision of a quality service. This intervention will include operationalising hydrological stations (satellite communication, maintenance, calibration, data processing, and acquisition of tools and materials), strengthening the institutional and legal frameworks of the hydrology sector (legal, human resources, and training), promoting environmental awareness, reducing vandalism, and increasing community surveillance.</p>



<b>Project Description &amp; Rationale (continued)</b>	<p>The project aims to ensure adaptation and mitigation against climate change impacts that regularly devastate the country through extreme events, such as floods and river overflows, and to create resilience through the operationalization of hydrometric stations for issuing alerts and managing river basins, in order to preserve lives and material goods.</p> <hr/> <p><b>Technical details:</b> Carry out repairs and maintenance of the stations, improve the communication system (satellites, data transmission, and antennas), carry out the calibration of hydro meteorological sensors, and acquire software for data processing.  <b>Market:</b> Approximately 200,000 inhabitants of São Tomé and Príncipe will benefit  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	The project is critical to mitigate the effects of climate change and to protect lives through early warning measures.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available <hr/> <b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available

# Economic Community of West African States (ECOWAS)



## Nounbiel Multipurpose Dam

### PROJECT STAGE

S2A • Pre-Feasibility studies

### PROJECT STATUS

- **Financing:** The project is in the African Development Bank (AfDB) pipeline and was appraised in 2014 for possible feasibility studies. However, no progress has been reported in this regard and momentum should be created to move this project forward.
- **Project readiness:** The three countries (Burkina Faso, Ivory Coast, and Ghana) need to negotiate, agree on key modalities, and confirm their joint willingness and readiness to cooperate during preparation of the project through a trilateral agreement to key development partners and financiers.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Burkina Faso's Ministry of Water and Sanitation and Volta Basin Authority
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Maxime Somda, Technical Advisor, Ministry of Water and Sanitation, Burkina Faso, maxime.somda@gmail.com</li> <li>• Eng. Robert Yaovi Dessouassi, Executive Director, Volta Basin Authority, secretariat@abv.int, rdessouassi@abv.int</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of West African States (ECOWAS)
<b>Sector</b>	Water
<b>Project Location</b>	Burkina Faso, Ivory Coast, and Ghana
<b>Estimated Total Project Cost</b>	<ul style="list-style-type: none"> <li>• Estimated total cost of Feasibility Studies = no information available.</li> <li>• The total discounted cost in 2020 of this dam is estimated at US\$ 1,694,915,254</li> </ul> <p><b>Type and Quantum of funding required:</b> Not specified.</p>
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• 40m high dam with storage capacity of a total volume of 11.3 km<sup>3</sup> and a useful volume of 8.8 km<sup>3</sup></li> <li>• A hydroelectric potential of over 303 GWh for the benefit of the countries of the Volta basin</li> <li>• A hydro-agricultural potential of nearly 9000 ha in Burkina Faso and Ghana</li> </ul>

<b>Project Description &amp; Rationale</b>	<p>The idea for the construction of the Nounbiel dam was born in the 1970s with a view of strengthening cooperation between the Republic of Ghana and Burkina Faso. Since then, several negotiations have taken place. The Nounbiel dam project's primary purpose is to provide hydropower and improve agricultural production. The project aims to contribute to poverty reduction, economic growth, building resilience to climate change, promoting gender equality in accessing water resources, and improving the living conditions of people living in both the area under direct influence (Burkina Faso, Ghana, Côte d'Ivoire) and other countries in the Volta basin (Benin, Mali, Togo).</p> <p>The Nounbiel dam will improve land development, access to electricity, the supply of potable water; the creation of productive activities in fishing, livestock, and tourism for riparian and surrounding communities; and strengthening cooperation between States and transboundary communities.</p> <p>The project will also have multiplier effects - it will contribute towards the creation of development opportunities in the region and, through job creation, improve the livelihoods of young people during and after the construction of the dam.</p> <hr/> <p><b>Technical details:</b> Ridge height 248m and normal reservoir elevation of 245m; minimum reservoir operating elevation 235m; dam type is dike crest; length 3,700m, height on foundations 40m; reservoir surface area (hill 245m) 1,430 km<sup>2</sup>.</p> <p><b>Market:</b> Agricultural beneficiaries include the population of the three countries living in the project area, and an estimated 160,000 producers. Production of 303 GWh of electricity will benefit about 10 million inhabitants around the Volta basin.</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 1970s: The idea for the construction of the Nounbiel dam was initiated.</li> <li>• 1974 –1977: Inventory studies of the hydroelectric potential of the three tributaries of the Volta (Black, White, and Red) were conducted for the Koulbi-Nounbiel site by Electricité de France.</li> <li>• 1994: The Ministry of Public Works, Housing, and Urban Development conducted the technical review of the Nounbiel project.</li> <li>• 2001: Burkina Faso and Ghana drew up a Memorandum summarizing the major negotiating meetings between the two countries from 1970 to 2001.</li> <li>• 2011: The Nounbiel project was selected as a priority project in terms of major hydraulic works with a significant impact on regional integration.</li> <li>• 2014: The AfDB developed the terms of reference for feasibility studies and environmental and social impact studies of the Nounbiel dam with a budgetary assessment.</li> </ul>
<b>Completed Milestones</b>	<p>No information available</p>
<b>Project Insights</b>	<ul style="list-style-type: none"> <li>• The three countries need support in creating a platform to deliberate on a cooperation agreement and to endorse the project implementation modalities.</li> <li>• ECOWAS and the three countries need support in securing the financing project feasibility studies and financing for the subsequent project phases.</li> </ul>
<b>Estimated Commercial Operation Date</b>	<p>No information available</p>
<b>Proposed Commercial Model</b>	<p>No information available</p> <hr/> <p><b>Proposed Project Structure:</b> No information available</p>
<b>Implementation Strategy/Plan</b>	<p>No information available</p>



## Fomi Multipurpose Dam Development Project

### PROJECT STAGE

S3B • Transaction Support & Financial Close

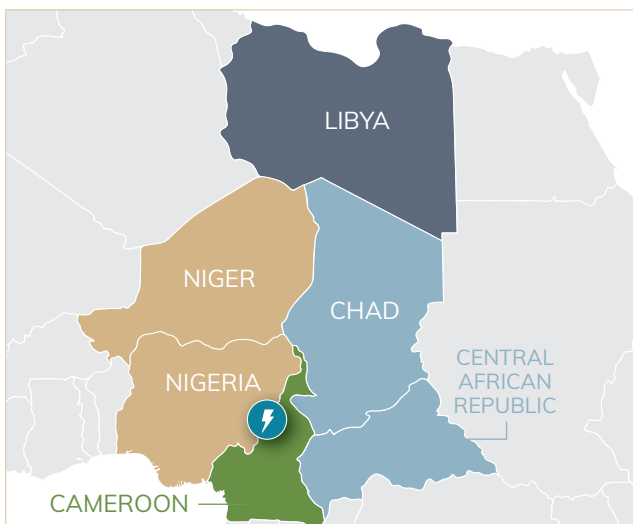
### PROJECT STATUS

- **Financing:** The project is in the financial close stage and the countries require transactional support to take the project forward.
- **Project readiness:** The project sponsors and owners need to negotiate and agree on key modalities.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Ministère de l'Energie de la Guinée
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Ibrahim Soumana, Coordinateur de Projets, West African Power Pool (WAPP), Benin; E-mail: nisoumana@ecowapp.org</li> <li>• Mr. Bernad Hessou, Head of Planning, Studies and Project Financing Division, WAPP, Benin; E-mail: bhessou@ecowapp.org</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of West African States (ECOWAS)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Fomi in Guinea
<b>Estimated Total Project Cost</b>	US\$ 55.2 million
	<b>Type and Quantum of funding required:</b> Not specified
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Level of the water body (normal reservoir): 396m; Volume of the reservoir: 4978 Mm <sup>3</sup> ; Area of the reservoir: 367 km <sup>2</sup> ; Maximum height of the dam: 50 m; Length of the average concrete dam: 192.12m; Hydraulic turbine: Number: 3; Model : ZZ550-L J- 470; Nominal output power: 30.93 MW; Nominal flow rate (unit) of the turbines: 151.32 m <sup>3</sup> /s.
<b>Project Description &amp; Rationale</b>	<p>The degradation of the ecosystem in the Niger River Basin may deteriorate the living conditions of the riparian population and eventually compromise their existence. This is why the development of the Fomi dam constitutes the best alternative for sustainable development in Upper Niger - it guarantees the safeguarding of the natural resources within the river basin.</p> <p>The project aims to ensure the basic needs of water supply are met through the watering of livestock, the development of irrigated agriculture, low cost hydroelectricity production, the development of fishing and fish farming, the improvement of river navigation, and the development of ecotourism.</p>

<b>Project Description &amp; Rationale (continued)</b>	<p><b>Technical details:</b> Level of the water body (normal reservoir): 396m; volume of the reservoir: 4978 m<sup>3</sup>; area of the reservoir: 367 km<sup>2</sup>; maximum height of the dam: 50m; length of the average concrete dam: 192.12m; hydraulic turbine number 3 model ZZ550-L J- 470; nominal output power: 30.93 MW; nominal flow rate (unit) of the turbines: 151.32 m<sup>3</sup>/s.</p> <p><b>Market:</b> No information available</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 1920: First mention of the regulation of Niger by reservoirs upstream</li> <li>• 1939 – 1999: Various interventions and progress recorded</li> <li>• 1999: Update of the feasibility study of the hydroelectric project by SNC</li> <li>• 2007: WB donation in favour of P-GREGDE/ABN for updating the final technical studies of the Fomi dam</li> <li>• 2010: Environmental assessment: ESIA, PRI, PGES, PDL (Coyne and Bellier)</li> <li>• 2013: Update of the feasibility study by SNC</li> <li>• 2016: Signing of the Memorandum of Understanding between the Company Yellow River Engineering Consulting Co, Ltd. (YREC) in Beijing</li> <li>• 2017: Feasibility study update report by Tractebel</li> <li>• 2017: Update report on the environmental and social impact study by AECOM</li> </ul>
<b>Completed Milestones</b>	<ul style="list-style-type: none"> <li>• Feasibility studies</li> <li>• ESIA studies</li> </ul>
<b>Project Insights</b>	<ul style="list-style-type: none"> <li>• The Fomi multi-purpose dam project and the riparian countries need support in creating the platform to deliberate on cooperation towards financial close for the project to take it forward.</li> <li>• ECOWAS and the riparian countries need support in securing financing for the project to complete the remaining phases.</li> </ul>
<b>Estimated Commercial Operation Date</b>	<p>No information available</p>
<b>Proposed Commercial Model</b>	<p>No information available</p> <p><b>Proposed Project Structure:</b> No information available</p>
<b>Implementation Strategy/Plan</b>	<p>No information available</p>



## 3,050 MW Mambilla Hydroelectric Power Project

### PROJECT STAGE

S3A • Project Structuring

### PROJECT STATUS

- **Financing:** The project is in the financial structuring stage and the countries require transactional support to take it forward.
- **Project readiness:** The project sponsors and owners need to negotiate and agree on key modalities to get the project ready for consideration by financiers.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Federal Ministry of Power, Nigeria
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Eng. Faruk Yusuf, Director, Federal Ministry of Power, Nigeria, E-mail: faruk.yusuf@power.gov.ng; fyyabo@yahoo.com</li> <li>• Eng. Abubakar Dapshima, Deputy Director, Federal Ministry of Power, Nigeria; E-mail: dapshimaabubakar@gmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of West African States (ECOWAS)
<b>Sector</b>	Hydroelectric
<b>Project Location</b>	The Mambilla Hydroelectric Power Project is located in Sardauna LGA of Taraba State, in North-East of Nigeria, lying between longitude 10° 50'E and 11° 38'E and latitude 6° 22'N and 7° 18'N.
<b>Estimated Total Project Cost</b>	US\$ 5.8 billion
	<b>Type and Quantum of funding required:</b> Not specified.
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	<p>Mambilla hydroelectric facility will comprise of four dams, two underground powerhouses, and a total of twelve turbine generator units. Nya and Sumsum will be 100m and 35m tall roller compacted concrete (RCC) dams with crest lengths of 515m and 460m, respectively.</p> <p>Nghu will be a 95m high rockfill dam with a crest length of 650m, while Api Weir will be a small regulatory dam to raise the water level of the river.</p>
<b>Project Description &amp; Rationale</b>	<p>The Mambilla hydropower project is a 3.05 GW hydroelectric facility being developed on the Dongo River near Baruf, in Kakara Village of Taraba State, Nigeria. The project is being undertaken by Nigeria's Federal Ministry of Power and is expected to be launched into full commercial operation in 2030.</p> <p>When completed, Mambilla will be Nigeria's biggest power plant, producing approximately 5.5 billion kWh of electricity per year. The project aims to increase the country's access to electricity, stimulate economic growth development, and</p>

<b>Project Description &amp; Rationale (continued)</b>	<p>improve the living standards of millions of Nigerians and that of their neighbours from Niger, Togo, Benin, and Chad.</p> <p><b>Technical details:</b> Hydroelectric Power with Solar Hybrid</p> <p><b>Market:</b> Based on 5.5 billion kWh/year output, the project will supply 550 kWh to 10 million people each year</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	Feasibility studies completed in 2018
<b>Project Insights</b>	The project requires structuring and preparation towards readiness for financial close. Cooperation and diligence are required from all partners to move it forward.
<b>Estimated Commercial Operation Date</b>	Expected to be launched into full commercial operation in 2030
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



## Louga Hydroelectric Power Plant 1 and 2 (246 MW)

### PROJECT STAGE

S2A • Pre-Feasibility

### PROJECT STATUS

- **Financing:** The project is in early pre-feasibility stage and the countries require financial support for the next steps into feasibility studies to move forward.
- **Project readiness:** The project is in early pre-feasibility stage and this requires negotiations, cooperation, and support from the sponsors, partners, and financiers.

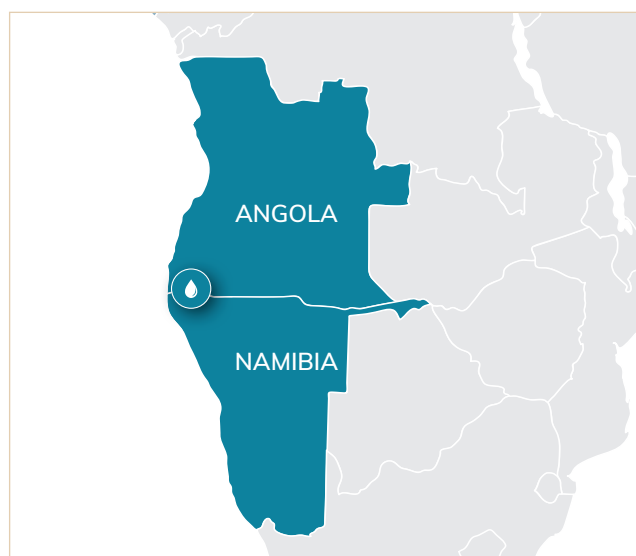
## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	CI-ENERGIES, West African Power Pool (WAPP)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Ibrahim Soumana, Coordinateur de Projets, WAPP, Benin; Email: nisoumana@ecowapp.org</li> <li>• Mr. Bernad Hessou, Chef Division Planification, Etudes et Financement des Projets, WAPP; Benin; Email: bhessou@ecowapp.org</li> </ul>
<b>Regional Economic Community (REC)</b>	Economic Community of West African States (ECOWAS)
<b>Sector</b>	Energy
<b>Project Location</b>	The Louga 1 and 2 hydroelectric facilities will be located in the Sassandra department in the Gbôklé region of Benin.

<b>Estimated Total Project Cost</b>	US\$ 613.3 million
	<b>Type and Quantum of funding required:</b> Not specified
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• Louga 1: Water reservoir of 55m with a reservoir of approximately 297.6 million m<sup>3</sup>; Dam 1683m long and 30m high; 3 bulb-type groups totalling an installed capacity of 126 MW.</li> <li>• Louga 2: Water retention of 30m with a reservoir of approximately 237 million m<sup>3</sup>; Dam 1107m long and 33m high; three bulb-type groups with a total installed capacity of 120 MW.</li> </ul>
<b>Project Description &amp; Rationale</b>	<ul style="list-style-type: none"> <li>• 2019-2033: The ECOWAS Master Plan for the Development of Regional Means of Electric Power Generation and Transport.</li> <li>• 2018: Adopted by the Authority of Heads of State and Government of ECOWAS, through the Additional Act A / SA.4 / 12/18 which identified the key priority projects whose implementation is essential for a stable integration of national electricity networks in the ECOWAS region and to facilitate optimal exchanges and marketing of energy. Among the priority projects included in this Master Plan is the Louga 1 and 2 hydroelectric power station project, which will improve the quality of service as well as stimulate economic growth at national and sub-regional levels.</li> </ul>
	<p><b>Technical details:</b> Hydraulic</p> <p><b>LOUGA 1:</b> 55m water reservoir with a reservoir of approximately 297.6 million m<sup>3</sup>; Dam 1683m long and 30m high; Three bulb-type units totaling an installed capacity of 126 MW</p> <p><b>LOUGA 2</b> - 30m water retention with a reservoir of approximately 237 million m<sup>3</sup>; Dam 1107m long and 33m high; Three bulb-type groups totaling an installed capacity of 120 MW</p> <p><b>Market:</b> The production will be fed into the WAPP interconnected network and annual production capacity is estimated at 646 GWh. Information on beneficiaries not specified.</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	<p>The project is in early pre-feasibility phase and requires negotiation and collaboration to move it forward.</p> <p>The project has the potential to increase power within the ECOWAS region, improve the quality of service, and stimulate economic growth at national and sub-national levels.</p>
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available
<b>Implementation Strategy/Plan</b>	No information available



# Southern Africa Development Community (SADC)



## Baynes Hydropower Project

### PROJECT STAGE

S2B • Feasibility

### PROJECT STATUS

- **Financing:** The project is in the feasibility stage and will require detailed designs and procurement. Funding for the project is not yet fully determined.
- **Project readiness:** The project needs to move to the next step which requires cooperation from the riparian Member States. The next steps entail detailed designs and procurement.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Permanent Joint Technical Commission on the Cunene River Basin (PJTC)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Muyenga Muyenga, Manager, Nampower, Namibia; Email: Muyenga.Muyenga@nampower.com.na; johannes.mukusuka@nampower.com.na</li> <li>• Mr. Antonio Pinto, Manager, RNT, Angola; Email: apinto@rnt.co.ao; jean.madzongwe@sapp.co.zw</li> </ul>
<b>Regional Economic Community (REC)</b>	Southern Africa Development Community (SADC)
<b>Sector</b>	Energy
<b>Project Location</b>	Along Cunene River in Namibia
<b>Estimated Total Project Cost</b>	<p>US\$ 1.3 billion Total project cost excludes interest during construction (reference date 2014).</p> <p><b>Type and Quantum of funding required:</b> US\$ 1.3 billion (civil: US\$ 880 million; electro-mechanical: US\$ 310 million; environmental cost: US\$ 7.5 million; Indirect cost: US \$108 million).</p>
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• The Baynes Dam will be 200m high and will permanently flood an area of approximately 19 km<sup>2</sup> with an estimated maximum of 57 km<sup>2</sup> at peak level.</li> <li>• Turbines will be installed along with a power plant, switch plant, and ancillary structures, while power lines will be constructed from the plant to the nearest substations in Angola and Namibia.</li> <li>• The dam will generate an estimated 600 MW at peak.</li> </ul>

<b>Project Description &amp; Rationale</b>	<p>The Baynes Hydropower Project involves the construction of a hydropower dam on the Cunene River, 48 km downstream of the Epupa Falls. It is envisaged that the Baynes mid-merit/peaking power station's capacity will be in the range of 600 MW, which will be shared equally by Namibia and Angola.</p> <p>The project objectives entail providing clean energy and contributing to sustainable industrial and economic development in the two countries, reducing the current levels of power deficits in the two countries, increasing access to electricity to various parts of the two countries, and contributing to increased SAPP Energy Market capacity.</p> <p><b>Technical details:</b> Hydropower, 600 MW  <b>Market:</b> SAPP Energy Market  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 1995 – 1998: The project's initial studies were conducted.</li> <li>• 2009: Environmental Resources Management (ERM) was appointed to conduct an independent Environmental and Social Impact Assessment (ESIA).</li> <li>• 2009 – 2012: Detailed techno-economic and environmental feasibility studies were conducted.</li> <li>• 2021: Both TEFS and ESIA are currently being updated.</li> </ul>
<b>Completed Milestones</b>	<p>Feasibility study and ESIA</p>
<b>Project Insights</b>	<p>The development of the project will involve further stages of feasibility studies, detailed designs, and procurement.</p>
<b>Estimated Commercial Operation Date</b>	<p>No information available</p>
<b>Proposed Commercial Model</b>	<p>No information available</p> <p><b>Proposed Project Structure:</b> No information available</p>
<b>Implementation Strategy/Plan</b>	<p>No information available</p>



## Lesotho Botswana Water Transfer

### PROJECT STAGE

S2B • Feasibility

### PROJECT STATUS

- **Financing:** The project is in pre-feasibility stage and will require feasibility studies, detailed designs, and procurement. Funding for the project is not yet fully determined.
- **Project readiness:** The project needs to move to the next step which requires cooperation from the riparian Member States. The next steps entail feasibility studies.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	<ul style="list-style-type: none"> <li>• Joint Study Management Committee</li> <li>• ORASECOM Secretariat</li> </ul>
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Leshoboro Nena, Director, Lesotho Lowlands Water Supply Scheme Unit, Ministry of Water, Lesotho; Email: leshoboro.nena@gmail.com; maseatilem@yahoo.co.uk</li> <li>• Dr. Kobamelo Dikgola, Principal Water Engineer, Department of Water Affairs, Ministry of Land Management, Water and Sanitation Services, Botswana; Email: kdikgola@gov.bw; pkmodiakgotla@gov.bw</li> </ul>
<b>Regional Economic Community (REC)</b>	Southern Africa Development Community (SADC)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Dam in Lesotho. Conveyance system in Lesotho, South Africa, and Botswana.
<b>Estimated Total Project Cost</b>	<p>About US\$ 3.004 billion</p> <p><b>Type and Quantum of funding required:</b> About US\$ 3 billion for construction, and US\$ 4 million for studies.</p>
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• A dam of 200 MCM/year yield on Makhalleng River in Lesotho, mainly meant for water transfer to Botswana</li> <li>• Conveyance through possible options of 685-921 km pipeline or pipeline/canal combination</li> </ul>
<b>Project Description &amp; Rationale</b>	<p>The objective of the project is to transfer water from Lesotho to Botswana through South Africa, to meet water supply demands in Botswana, the Lowlands of Lesotho, and en route – parts of South Africa.</p> <p>The project involves the construction of a multipurpose dam along Makhalleng River in Lesotho and a conveyance system from Lesotho to Botswana. Various predicted water uses include domestic, industrial, irrigation, hydropower generation, and environmental water requirements.</p> <p>Given that the two states are in the same Orange Senqu River Basin, and are thus both party to ORASECOM, there is an opportunity to transfer water from Lesotho to Botswana through South Africa. The transfer is anticipated to meet water demands for the riparian parties and build resilience to the impacts of climate change in the three countries.</p> <p><b>Technical details:</b> Although studies are ongoing, indicatively about 75% of the yield from the proposed dam in Lesotho is foreseen for water demands in Botswana.</p> <p><b>Market:</b> It is anticipated that over 3 million people could benefit from the project through the utilisation of the water as it traverses from Lesotho, through South Africa, and into Botswana. Various predicted water uses include domestic, industrial, irrigation, hydropower generation, and environmental water requirements. This is to be fully clarified by feasibility studies.</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	2015: Desktop study undertaken by the three countries indicated that Botswana, which is arid, will experience bulk water shortages around 2025 unless a major new water source is developed.

<b>Project Timeline (continued)</b>	The expected water shortages could worsen due to climate change. Lesotho on the other hand has relative abundance of high-quality water, and is located upstream of Botswana.
<b>Completed Milestones</b>	Desktop studies to understand the water shortage issues and implications for Botswana
<b>Project Insights</b>	The development of project will involve further stages of pre-feasibility and feasibility studies.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available <b>Proposed Project Structure:</b> Public Private Partnership options being considered.
<b>Implementation Strategy/Plan</b>	No information available



## Lesotho Highlands Water Project Phase II

### PROJECT STAGE

S3A • Project Structuring

### PROJECT STATUS

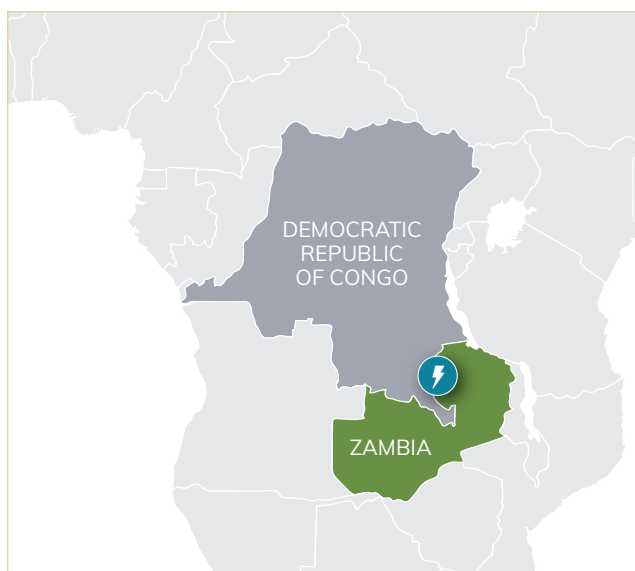
- **Financing:** The financing arrangements for Phase II of the LHWP are articulated in Article 13 of the Phase II Agreement.
- **Project readiness:** Construction of the dam and tunnel were scheduled to begin during the last quarter of 2017 and will be commissioned together with the hydropower component by 2024.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	<ul style="list-style-type: none"> <li>• Lead Agency: Lesotho Highlands Development Authority</li> <li>• Sponsor: Lesotho Water Commission</li> <li>• Sponsor: South African Department of Water and Sanitation</li> </ul>
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Masilo Phako, Public Relations Manager, Lesotho Highlands Development Authority, Lesotho; Email: phakoem@lhda.org.ls; maseatilem@yahoo.co.uk</li> <li>• Ms. Duduzile Twayi, Chief Director, Transboundary Water Resources, Department of Water and Sanitation, South Africa; Email: TwayiD@dws.gov.za</li> </ul>
<b>Regional Economic Community (REC)</b>	Southern Africa Development Community (SADC)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Lesotho and South Africa
<b>Estimated Total Project Cost</b>	US\$ 2.6 billion <b>Type and Quantum of funding required:</b> Estimated capital expenditure of approximately US\$ 1 billion for the major dam and transfer infrastructure and approximately US\$ 0.7 - 0.9 billion for the hydropower component in Lesotho.

<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	<p>The project includes construction of:</p> <ul style="list-style-type: none"> <li>• 60 km access road;</li> <li>• 165m high Polihali dam at Tlokoeng, 5 km downstream of the confluence of the Orange-Senqu and Khubelu rivers, Mokhotlong district;</li> <li>• 38 km long tunnel from Polihali discharging into the Katse reservoir;</li> <li>• Kobong Pump Storage</li> <li>• 161m high Kobong Dam; and</li> <li>• Project sites and camps, power transmission lines, and administration centres.</li> </ul>
<b>Project Description &amp; Rationale</b>	<p>The aim of the second phase is to deliver more water by gravity to the Vaal River system, which is critical in South Africa as it powers the economic heart in Gauteng and supplies water to electricity stations in Mpumalanga.</p> <p>South Africa is looking forward to the LHDP Phase 2 to secure water for Gauteng and the rest of the Vaal River water supply area.</p> <p>For Lesotho, Phase 2 is expected to increase the existing hydropower generation capacity to the benefit of both local and regional consumption. Hydropower capacity improvements to be considered by Lesotho as part of Phase 2 include erecting stations powered by downstream releases from the Polihali, Katse, and Mohale Dams.</p> <p><b>Technical details:</b> Construction of Polihali Dam (2,325 MCM full supply storage, 165m high dam wall, 921m crest length, 9m crest width, 45m high saddle dam with 603m crest length and 6.5m crest width); 38 km transfer tunnel to Katse Dam; advance infrastructure (power, telecommunications, roads, etc), hydropower generation (211 MW); water transfer to increase to over 1,270 MCM/year.</p> <p><b>Market:</b> 17,000 affected people in Lesotho and Gauteng. In impact, the beneficiaries from the project are estimated to be over 8 million, including those in Lesotho and South Africa. Various predicted water uses include domestic, industrial, tourism, hydropower generation, and environmental water requirements.</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	Since 2011, discussions have intensified and have been related to various funding options.
<b>Completed Milestones</b>	The feasibility study for the main water transfer scheme is complete; feasibility studies related to the hydropower component and related social and environmental impact studies are ongoing.
<b>Project Insights</b>	<ul style="list-style-type: none"> <li>• Two countries are involved, therefore coordination and collaboration are required by both countries.</li> <li>• Political risk insurance, where required, could add a cost to the project, but could be minimized through existing project governance structures.</li> <li>• An increase in interest rates could result in additional funding costs to the project.</li> </ul>
<b>Funding Requirements</b>	<ul style="list-style-type: none"> <li>• <b>Type of funding:</b> Funded off-budget, meaning funds will be borrowed from various financial institutions</li> <li>• <b>Value of funding:</b> US\$ 2.6 billion</li> </ul>
<b>Estimated Commercial Operation Date</b>	<ul style="list-style-type: none"> <li>• The construction of the dam and tunnel was scheduled to begin during the last quarter of 2017 and is expected to run until 2024.</li> <li>• The hydropower component was expected to start in 2018, however it is now expected that both components will be jointly commissioned by 2024.</li> </ul>

Proposed Commercial Model	No information available
	<b>Proposed Project Structure:</b> PPP options being explored.
Implementation Strategy/Plan	No information available



## Luapula Hydropower Project

### PROJECT STAGE

S2B • Feasibility

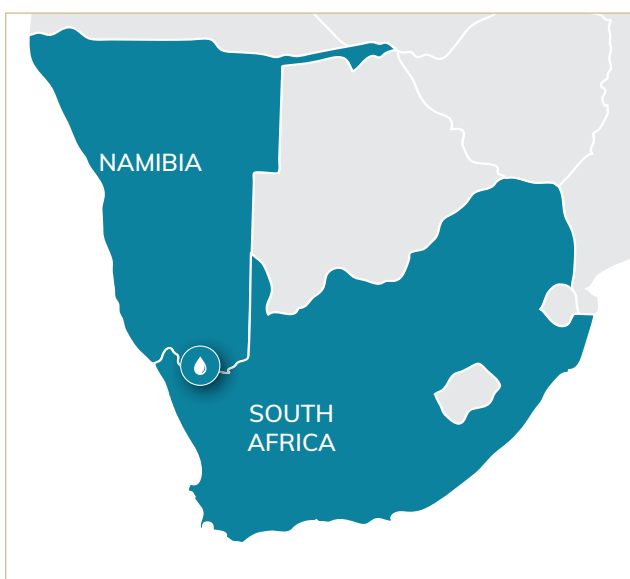
### PROJECT STATUS

- **Financing:** The project is in feasibility stage and will require detailed designs and procurement. Funding for the project is not yet fully determined.
- **Project readiness:** The project needs to move to the next step which requires cooperation from the riparian Member States. The next steps entail detailed designs and procurement.

## PROJECT INFORMATION

Project Sponsors/ Owners	Southern Africa Power Pool (SAPP)
Contact Details	<ul style="list-style-type: none"> <li>• Eng. Ernest Banda, Senior Manager, ZESCO, Zambia; Email: ecbanda@zesco.co.zm</li> <li>• Mr. Michael Muamba, Manager, SNEL, DRC; Email: michelmuamba@yahoo.fr</li> </ul>
Regional Economic Community (REC)	Southern Africa Development Community (SADC)
Sector	Energy
Project Location	Democratic Republic of Congo (DRC) and Zambia
Estimated Total Project Cost	<b>Type and Quantum of funding required:</b> US\$ 9 million for project preparation phase. First implementation phases will target 270 MW estimated to cost US\$ 549 million.
Funding Strategy/ Plan	Not specified
Economic Impact Analysis	No information available
Infrastructure	1200 MW hydro installed capacity in four phases
Project Description & Rationale	The governments of the Democratic Republic of Congo and the Republic of Zambia signed an Intergovernmental Memorandum of Understanding (IGMOU) on 9 July 2015 for the joint development of generation projects in the Luapula River Basin and for a new power interconnector between the two countries.

<b>Project Description &amp; Rationale (continued)</b>	<p>The national power utilities of the two countries entered into a specific MoU for the development of the generation projects and for the power interconnector respectively. The Inter Utility Memorandum of Understanding for the power interconnector was also signed on 9 July 2015.</p> <p>The project objectives are to provide clean energy by contributing to sustainable industrial and economic development in the two countries, reduce the current levels of power deficits in the two countries, increase access to electricity to various parts of the two countries, contribute to increased SAPP energy market capacity, and improve the network stability in the southern region of DRC and the Northern region of Zambia.</p> <p><b>Technical details:</b> 1200 MW hydro installed capacity in 4 phases  <b>Market:</b> SAPP Market  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 1976: The Luapula River was initially investigated for hydropower development by the Zambian Government during which time five sites were established and investigated.</li> <li>• 2001: ZESCO LTD confirmed the potential of over 1188 MW, of which more than 773 MW is firm capacity.</li> </ul>
<b>Completed Milestones</b>	<p>Pre-feasibility studies</p>
<b>Project Insights</b>	<p>The development of the project will include further stages of feasibility studies, detailed designs, and procurement.</p>
<b>Estimated Commercial Operation Date</b>	<p>No information available</p>
<b>Proposed Commercial Model</b>	<p>No information available</p> <p><b>Proposed Project Structure:</b> No information available.</p>
<b>Implementation Strategy/Plan</b>	<p>No information available</p>



## Noordeweer-Vioolsdrift Dam

### PROJECT STAGE

S2B • Feasibility

### PROJECT STATUS

- **Financing:** The project is in feasibility stage and will require quantification towards detailed designs and procurement. Funding for the project is not yet fully determined.
- **Project readiness:** The project needs to move to the next step which requires cooperation from the riparian Member States. The next steps entail further feasibility studies as well as detailed designs, procurement, and construction.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Permanent Water Commission (PWC): Namibia and South Africa.
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Ms. Maria Amakali, Director: Water Resource Management, Ministry of Agriculture, Water and Forestry, Namibia, and PWC Namibia Head of Delegation; Email: Maria.Amakali@mawf.gov.na</li> <li>• Mr. Livhuwani Mabuda, Chief Director: Integrated Water Resource Planning, and PWC RSA Head of Delegation, Department of Water and Sanitation, South Africa; Email: mabudal@dws.gov.za</li> </ul>
<b>Regional Economic Community (REC)</b>	Southern Africa Development Community (SADC)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	The site of the proposed Noordoewer/Vioolsdrift Dam (NVD), to be constructed on the Lower Orange River, is located near the Vioolsdrift (South Africa) and Noordoewer (Namibia) border posts, with approximate coordinates of: 28°45'44.96"S, 17°41'12.00"E.
<b>Estimated Total Project Cost</b>	<p>The estimated cost of the project is US\$ 501 million</p> <p><b>Type and Quantum of funding required:</b> Further feasibility studies are estimated at approximately US\$ 1 million and detailed design, procurement, and construction are estimated at approximately US\$ 500 million.</p>
<b>Funding Strategy/ Plan</b>	Not specified
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	Proposed dam wall height of about 73m; storage capacity of 2,800 million m <sup>3</sup> , concrete faced rock fill type
<b>Project Description &amp; Rationale</b>	<p>The first purpose of the NVD is to increase the long-term sustainable yield of the Orange River System and to replace the loss in yield due to the planned commissioning of the Lesotho Highlands Water Project Phase 2 (LHWP-2) and associated transfers to the Vaal River System.</p> <p>The second purpose is to provide for the projected growth in water requirements in the Orange River System, specifically future large-scale irrigation developments in Namibia, both upstream and downstream of the proposed NVD site.</p> <p>The third purpose of the NVD is to compensate for the impact of the implementation of the Reserve on the yield of the Orange River System and provide a re-regulation storage on the Lower Orange River to allow for releases to be made to correct the seasonal distribution of flows in accordance with the riverine Ecological Water Requirements in the Lower Orange River.</p> <p><b>Technical details:</b> The initially proposed NVD was sized as a concrete face rockfill dam, with parameters as set out below, consisting of a side spillway, outlet works, hydroelectric plant, river flow gauging weir, etc.</p> <p><b>Description:</b> Full Supply Level (FSL) – 230 masl; Freeboard – 12.5m; Non-Overspill Crest – 242.5 masl; Lowest River Bed Level – 162 masl; Dam Height up to NOC Level – 80.5m; Crest Length – 1 km; Crest Width – 10m; Embankment Slopes – 1V:1.4H. The exact dam parameters will be confirmed upon completion of the further studies referred to above.</p> <p><b>Market:</b> About 1.2 million people are within the project sphere of influence. The comparative advantage of agriculture in the area and high levels of unemployment best exhibit the NVD's potential contribution to development in the region.</p>



<b>Project Description &amp; Rationale (continued)</b>	<p>The proposed NVD can potentially stimulate specific sectors that have some resonance in the particular environments of the area, specifically agriculture and tourism.</p> <p>Through targeted support measures that look to address the evident weaknesses in the local economic system, the project can have a remarkable developmental impact.</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<ul style="list-style-type: none"> <li>• 2015: PWC commissioned the NVD Feasibility Study, which was aimed at identifying and optimising the best development dam size(s), site(s), and sequencing of dam developments in the ORS.</li> <li>• 2020: Feasibility studies were completed.</li> </ul>
<b>Completed Milestones</b>	Feasibility studies
<b>Project Insights</b>	The development of the NVD will involve further stages of feasibility studies, detailed designs, procurement, and construction
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	<p>No information available</p> <p><b>Proposed Project Structure:</b> No information available.</p>
<b>Implementation Strategy/Plan</b>	No information available



## Water Supply Project in Antanambao Manampotsy (Atsinanana Region)

### PROJECT STAGE

S1 • Project definition

### PROJECT STATUS

- **Financing:** The project is in definition stage and will require financing to conduct pre-feasibility and feasibility studies before moving forward.
- **Project readiness:** The project needs to move to the next step, which requires cooperation from Madagascar and PIDA partners. The next steps entail pre-feasibility studies.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Madagascar Ministry of Water, Sanitation, and Hygiene
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Ms. Holinantenaina Rakotobe Raheliasoa, Directeur de l'Intégration de la Dimension Environnemental, Ministry of Water, Sanitation, and Hygiene, Madagascar; Email: rholinantenaina@yahoo.fr</li> <li>• Mr. Ranto Rakotonjanahary, Ingénieur Concepteur, Ministry of Energy, Water and Hydrocarbons, Madagascar; Email: ranto.rkt@gmail.com</li> </ul>
<b>Regional Economic Community (REC)</b>	Southern Africa Development Community (SADC)
<b>Sector</b>	Transboundary Water

<b>Project Location</b>	Antanambao Manampotsy in the Atsinanana region of Madagascar
<b>Estimated Total Project Cost</b>	US\$ 2.2 million (Includes studies and light infrastructure development)
	<b>Type and Quantum of funding required:</b> Not specified.
<b>Funding Strategy/ Plan</b>	No information available
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	On water infrastructure development, the project components consist of feasibility studies, designs, and construction works.
<b>Project Description &amp; Rationale</b>	<p>The project consists of interventions on water infrastructure development to ensure adequate supply of potable water to communities in the Antanambao Manampotsy area. The project also seeks to implement water resource management interventions to increase climate resilience of the water resources systems in the area.</p> <p><b>Technical details:</b> The project consists of the following main components:</p> <ul style="list-style-type: none"> <li>• Awareness raising and stakeholder mobilisation on the project issues;</li> <li>• Integrated Water Resource Management, which will entail the development of understanding of the watershed and the water sources, water inventory studies, water use mapping studies by each user sector including zoning, developing institutional, policy, and legislative frameworks for the river basin, and developing an action plan for resource protection and infrastructure development; and</li> <li>• Water Supply Infrastructure Development</li> </ul> <p><b>Market:</b> The project will benefit about 46,700 residents in the community of Antanambao Manampotsy/Atsinanana areas.</p> <p><b>Legal:</b> No information available</p> <p><b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	No information available
<b>Completed Milestones</b>	No information available
<b>Project Insights</b>	The project needs to move to the next step of pre-feasibility studies with support and cooperation from PIDA and partners.
<b>Estimated Commercial Operation Date</b>	No information available
<b>Proposed Commercial Model</b>	No information available
	<b>Proposed Project Structure:</b> No information available.
<b>Implementation Strategy/Plan</b>	No information available

MAURITIUS



## Modernisation of Water Infrastructure Through Implementation of a Telemetry, Supervisory Control, and Data Acquisition System (SCADA) for Mauritius

### PROJECT STAGE

S2B • Feasibility

### PROJECT STATUS

- **Financing:** The project has received funding from the African Development Bank for telemetry and feasibility studies
- **Project readiness:** This project is in feasibility stage and is progressing well.

## PROJECT INFORMATION

<b>Project Sponsors/ Owners</b>	Mauritius Central Water Authority (CWA)
<b>Contact Details</b>	<ul style="list-style-type: none"> <li>• Mr. Holass Lochee, General Manager, Central Water Authority, Mauritius; Email: h_lochee@cwa.intnet.mu</li> <li>• Mr. Chandrasen Matedeen, Ag. Chief Operations Officer, Central Water Authority, Mauritius; E-mail: matadeen_c@cwa.intnet.mu</li> </ul>
<b>Regional Economic Community (REC)</b>	Southern Africa Development Community (SADC)
<b>Sector</b>	Transboundary Water
<b>Project Location</b>	Mauritius
<b>Estimated Total Project Cost</b>	US\$ 10 million
<b>Funding Strategy/ Plan</b>	No information available
<b>Economic Impact Analysis</b>	No information available
<b>Infrastructure</b>	<p>The targeted system will include the following functions:</p> <ul style="list-style-type: none"> <li>• Telemetry to collect basic operational data on the various sites and transmit them to control centres where they will be processed, displayed, analysed, used for operational decisions, and finally stored;</li> <li>• Remote monitoring to transmit notifications and alarms to the control centres in case of faults, defective equipment/system, and abnormal intrusions at CWA sites and buildings; and</li> <li>• Telecontrol to enable automatic and remote control of the operation of particular equipment (pumps, valves, etc).</li> </ul>
<b>Project Description &amp; Rationale</b>	<p>As a Small Island Developing State (SIDS), Mauritius is highly vulnerable to the effects of climate change, which manifests itself in several ways, including intense cyclones, abnormal tidal surges, prolonged droughts, flash floods, and increasing sea surface temperature.</p> <p>The main objective of this project is to adapt to and mitigate the impacts that these extreme phenomena can cause, and to enhance the resilience of the water distribution system to the adverse impacts of climate change.</p>

<b>Project Description &amp; Rationale (continued)</b>	<p>CWA is currently struggling to secure and optimize their operation.</p> <p><b>Technical details:</b> The CWA needs to implement digital solutions for remote monitoring and control of the equipment and accessories (pumps, gensets, meters, water levels, etc.) at various CWA pumping stations, service reservoirs, water treatment plants, and on its water distribution network to:</p> <ul style="list-style-type: none"> <li>• Ensure continuity of service by monitoring and tele-controlling system operations (pumps, generators, chlorination system, valves, water levels, etc) at all sites;</li> <li>• Ensure monitoring, data collection, and reporting with regards to water production;</li> <li>• Ensure and monitor water quality (residual chlorine, status of treatment systems, physicochemical and bacteriological quality);</li> <li>• Ensure security and surveillance of sites (intrusion detection and access control); and</li> <li>• Reduce costs pertaining to staff and logistics mobilisation on remote sites.</li> </ul> <p><b>Market:</b> CWA has nearly 384,890 customers, 93% of which are domestic consumers.  <b>Legal:</b> No information available  <b>Regulatory:</b> No information available</p>
<b>Project Timeline</b>	<p>No information available</p>
<b>Completed Milestones</b>	<p>No information available</p>
<b>Project Insights</b>	<p>The SCADA system will ensure continuity of service by monitoring and tele-controlling system operations (pumps, generators, chlorination system, valves, water levels, etc.) at all sites. The system will also ensure monitoring, data collection, and reporting with regards to water production; ensure and monitor water quality (residual chlorine, status of treatment systems, physicochemical and bacteriological quality); reduce costs pertaining to staff and logistics mobilisation on remote sites; and ensure security and surveillance of sites (intrusion detection and access control).</p>
<b>Estimated Commercial Operation Date</b>	<p>The Telemetry system is planned to be implemented over a period of two years, starting July 2022. A consultant has already been appointed for the feasibility, design, and preparation of bid documents for the implementation of the Telemetry system, which is expected to be completed by April 2022.</p>
<b>Proposed Commercial Model</b>	<p>No information available</p> <p><b>Proposed Project Structure:</b> No information available.</p>
<b>Implementation Strategy/Plan</b>	<p>The project implementation schedule has been provided. The Telemetry system is planned to be implemented over a period of two years, starting in July 2022. A consultant has already been appointed for the feasibility, design, and preparation of bid documents for the implementation of the Telemetry system, which is expected to be completed by April 2022.</p>

## Contact information



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