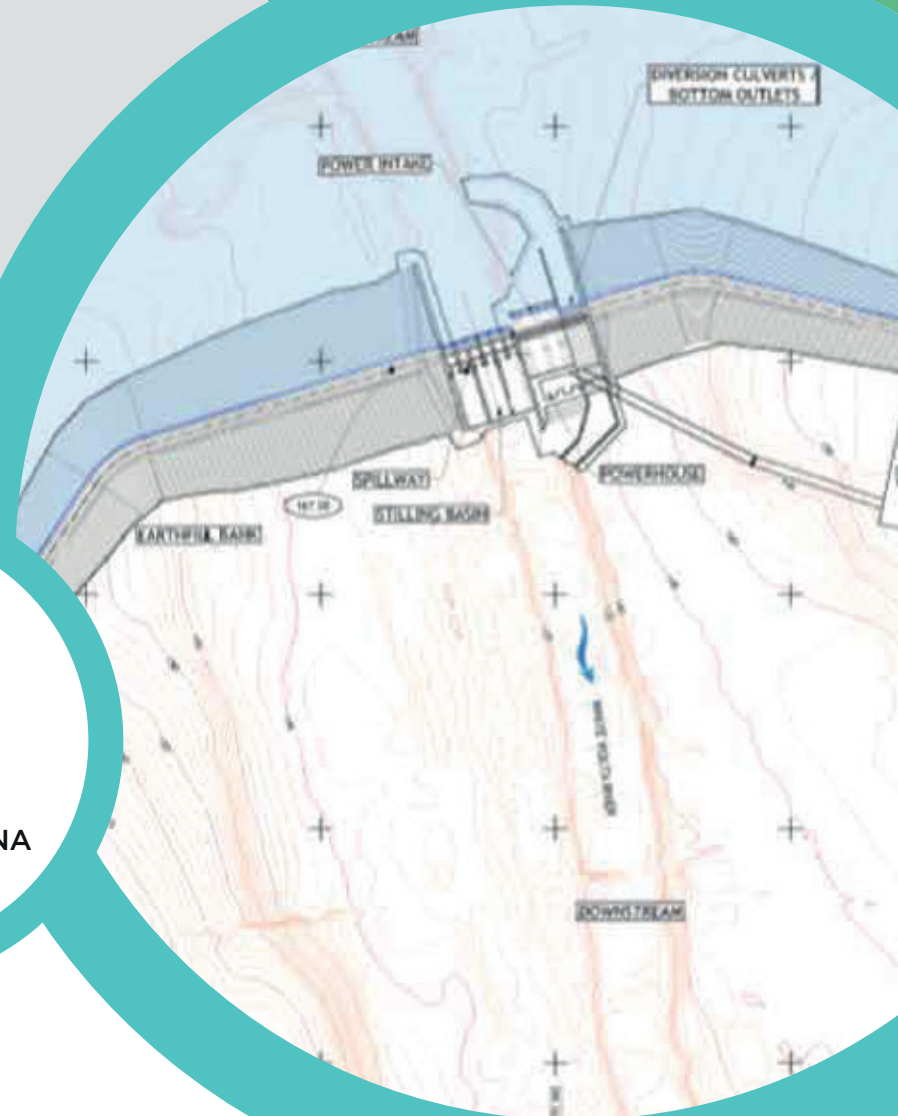


PWALUGU MULTIPURPOSE DAM AND  
IRRIGATION PROJECT (PMDP)

# PMDP ANNUAL PROGRESS REPORT (2020)



REPUBLIC OF GHANA



**VOLTA  
RIVER  
AUTHORITY**

*VRA...We Add Value to Lives*

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# 1.0 Executive Summary

In 2013, VRA, with funding from Agence Francaise de Development, engaged Tractebel Engineering to undertake a feasibility study and an environmental and social assessment of the Pwalugu Multipurpose Dam Project, after which the Government of Ghana decided to proceed with the construction of the 60 MW hydropower dam and 24,000-hectare irrigation project.

The Ministry of Energy therefore requested VRA to lead the implementation of the hydropower component. The Ghana Irrigation Development Authority (GIDA) was also tasked to lead the irrigation component.

## ACTIVITIES IN 4TH QUARTER

The Ministry of Finance wrote to the EPC Contractor advising and requesting for the Contractor's Central Securities Depository (CSD) details and recipient bank for payment of the advance.

Fieldwork for the update of the ESIA and preparation for the RAP which commenced on July 10, 2020 has been completed. The ESIA/RAP Consultant plans to submit the draft ESIA report submitted on December 14, 2020 for onward submission to the Environmental Protection Agency (EPA). The RAP report will be submitted by mid-January, 2021.

Consultant's Census and Socio-Economic survey covered a total of 2,453 households representing 15,562 people in 77 communities /settlements.

Demarcation and pillaring of the acquisition area has been completed. In total, 1,236 Type 'A' pillars were planted and surveyed over a distance of 460.93km. All consultants submitted their completion reports and input data to the Survey and Mapping Division of the Lands Commission for the preparation of the Cadastral map.

Land Valuation Division LVD completed referencing of properties and farms in the west Mamprusi Area. Work in the other 7 districts will start in January

Owner's Engineer Contract was signed with Tractebel Engineering to assist VRA supervise the EPC Contractor.

## 2.0 Introduction

### 2.1 PROJECT BACKGROUND

Volta River Authority has been involved in the Pwalugu Multipurpose Dam Project since 1991, when it engaged Coyne et Bellier – now Tractebel Engineering – to undertake a study on the site together with other schemes. The current project activities began with a Feasibility Study and Environmental and Social Impact Assessment (ESIA) funded by the Agence Francaise de Development of France. The Feasibility and ESIA studies were completed in 2018.

Following the completion of these studies, GoG decided to proceed with the project and tasked VRA with the implementation of the power component of the project and GIDA with the irrigation component. Accordingly, a Project Steering Committee comprising representatives from the Office of the Vice President, Ministry of Finance, Ministry of Energy, Ministry of Agriculture, Attorney General, VRA and GIDA was formed to provide leadership and guidance for the implementation of the Pwalugu Multipurpose Dam and Irrigation project.

The Ministry of Energy is the Employer acting on behalf of the Government of Ghana. It has also appointed the Volta River Authority (VRA) as the Employer's Representative for the project.

This report covers the activities on the power generation component of the Pwalugu Multipurpose Dam and Irrigation project.

## 3.0 ACTIVITIES DURING THE YEAR

Work on the pre-commencement site activities (repair of access road, geological investigations, topographical survey and construction of workers' temporary camp) started on June 1, 2020 and was completed within two months.

The EPC Contractor has submitted an invoice for Advance Payment to the GoG and is awaiting payment for the formal start of the project.

Fieldwork for the update of the ESIA and preparation of RAP, which commenced on July 10, 2020, has been completed. Consultant's census and socio-economic survey during the fieldwork covered a total of 2,453 households representing a total of 15,652 people in 77 communities/settlements.

Draft ESIA report was not submitted by December 14, 2020 as expected. The EPC Contractor has submitted an invoice for Advance Payment to the GoG and is awaiting payment for the formal start of the project.

Preparation of the ESIA Scoping Report for the solar component of the project by VRA's Environment & Sustainable Department (E&SD) has been completed and will be submitted in January 2021.

Demarcation and pillaring of the acquisition area was started on June 23, 2020 and completed in November 2020. In total, 1,236 Type 'A' pillars were planted and surveyed over a distance of 460.93km.

Land Valuation Division (LVD) commenced work in July 2020 on referencing of properties and valuation of farmlands in the project area work was completed in West Mamprusi District. The activity was suspended in September 2020 due to flooding in the project area and is scheduled to resume in January 2021.

Owner's Engineer (OE) advance and down payments pending due to VRA Management's decision to synchronize the OE payment with advance payment for the EPC Contractor, which is to be paid by Government.

Project Registration License, Siting Permit, and Dam Safety Registration License permits were obtained in 2020.



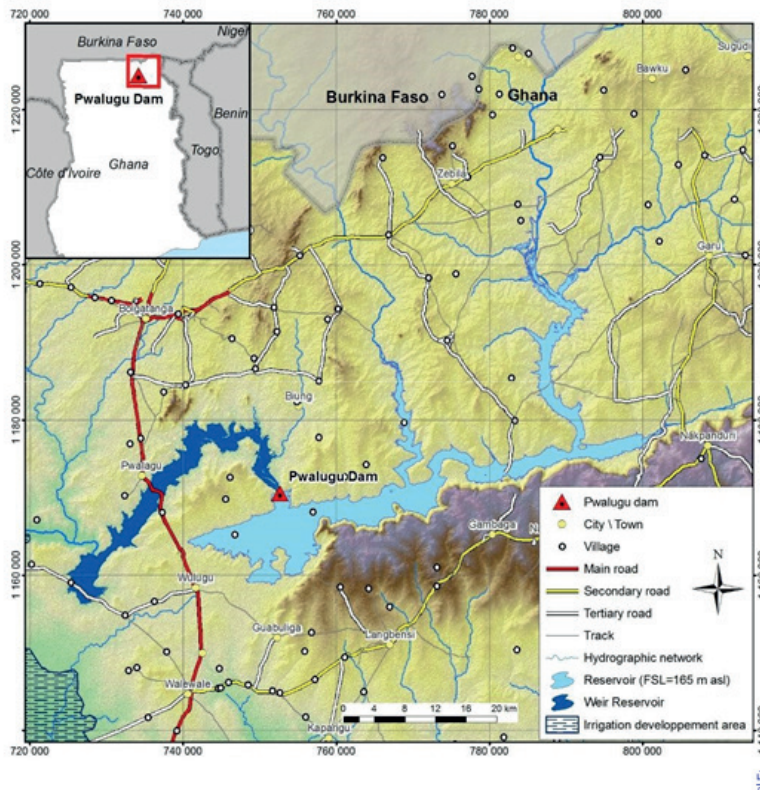


## 4.0 PROJECT DESCRIPTION

The Project is located in the Talensi District, on the boundary between Upper East and North East Regions and will comprise the following:

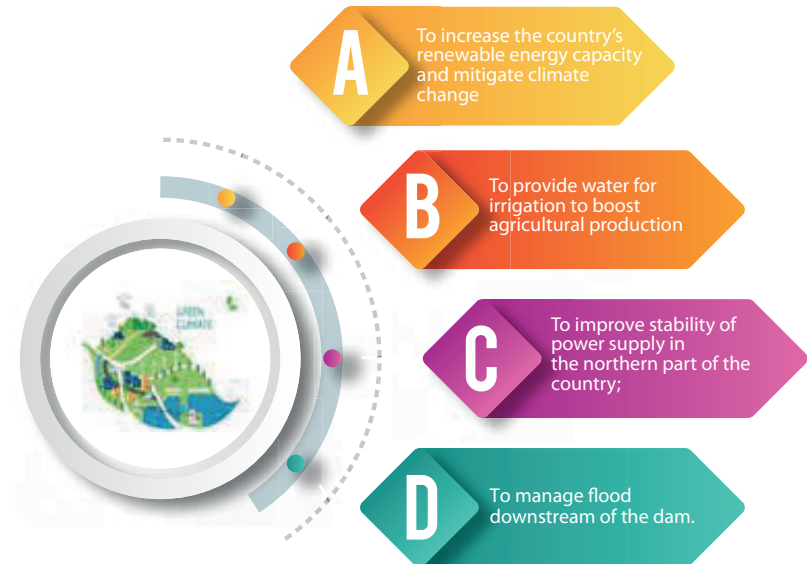
- A dam with maximum reservoir area of 263km<sup>2</sup> at the full supply level of 165m and a total storage of 2,622Mm<sup>3</sup>.
- A 60MW power house with two (2) Kaplan turbines.
- A 20-metre-high weir with primary and secondary canals for a 24,000-hectare irrigation scheme.
- 15km overhead transmission line to interconnect to the 161kV Tamale to Bolgatanga transmission line.
- A 50WMac Solar PV Plant

The irrigation component of the project is located downstream in Mamprusi West district in the North East Region.



## 4.1 PROJECT OBJECTIVES

The key objectives of the project are:



## 5.0 STATUS OF PROJECT AS AT END OF THIRD QUARTER, (2020) EPC

### BACKGROUND

The EPC contract for the construction of the PMDP was awarded to PowerChina International Group on December 24, 2019, after negotiations were concluded in November 2019. The contract was ratified by parliament in February 26, 2020 for an amount of \$401 million dollars. The EPC will undertake the construction of the dam, powerhouse and solar facility components of the Pwalugu Multipurpose Dam Project. The construction time for the dam and powerhouse is fifty (50) months. The time to complete the solar facility is ten (10) months.

### Activities

- PCA submitted Advance Payment and Performance Guarantees as well as Invoice for Advance Payment on May 21, 2020.
- Pre-commencement site activities including geological investigations, topographical and hydrological surveys, repair of access road from Wulugu to Kurugu, and construction of workers' camp, which started on June 1, 2020 were substantially completed.

- Tax exemption request for the EPC as well as the ESIA/RAP and Owner's Engineer Contracts was submitted to the Ministry of Energy.

## 5.1 ESIA AND RAP CONTRACT

### BACKGROUND

VRA obtained PPA approval to single source Tractebel Engineering and its local partner, SRC Consulting on September 6, 2019 to update the ESIA study completed in 2016 and prepare a Resettlement Action Plan for Project Affected Persons (PAP).

The ESIA will assess the project's impact on the flora and fauna of the project area and design measures to mitigate negative environmental effects. The RAP will handle the movement and resettlement of people within the reservoir area and provide compensation for property loss to restore and improve the economic livelihood.

### Activities

- Fieldwork for the update of the ESIA and RAP was suspended due to rains in project area. The ESIA Consultant (TE/SRC) plans to complete field work by October 22, 2020.
- Preliminary Field survey towards the scoping report for the solar site ESIA was completed in September by VRA's Environment & Sustainable Department during the quarter.
- Forestry commission in August 2020 undertook a reconnaissance survey of the affected forest reserve to establish a baseline of the flora and fauna in the project area for the ESIA study.

## 5.2 STAKEHOLDER ENGAGEMENT

The following stakeholder engagements have been held:

2019			
LEVEL	LOCATION	NUMBER OF COMMUNITIES & ENGAGEMENTS	DATE
Regional Level <ul style="list-style-type: none"> <li>• Upper East Region</li> <li>• Greater Accra</li> <li>• North East Region</li> </ul>	<ul style="list-style-type: none"> <li>• Bolgatanga</li> <li>• Accra</li> <li>• Nalerigu</li> </ul>	3 Engagements	<ul style="list-style-type: none"> <li>• April 16, 2019</li> <li>• April 24, 2019</li> <li>• August 14, 2109</li> </ul>
District Level			August 19-22, 2019

2020			
LEVEL	LOCATION	NUMBER OF ENGAGEMENTS	DATE
Regional Level <ul style="list-style-type: none"> <li>• Upper East</li> <li>• North East</li> </ul>	<ul style="list-style-type: none"> <li>• Bolgatanga</li> <li>• Nalerigu</li> </ul>		May 14-15, 2020
Community Level	15 Communities in Upper East & North East		June 2-8, 2020

## 5.3 LAND SURVEY

### BACKGROUND

On April 22, 2020, VRA engaged three survey firms, viz. Messrs. Rudan Engineering Ltd, A-M Surveys Ltd and Losamills Consult Ltd to undertake the land survey services for the project. The three boundaries.

### Activities

- Actual cadastral survey and demarcation of the project boundary started on June 23, 2020.
- Due to heavy rains and flooding in the working area, approximately 95% of the demarcation and pillaring of the acquisition area was completed. Work is expected to resume in November to complete planting of the remaining 50 pillars and demarcation work.

## 5.4 OWNER'S ENGINEER

### BACKGROUND

Public Procurement Authority on March 13, 2020 granted approval for the single sourcing of Tractebel Engineering of France as Owner's Engineer, after their proposal was reviewed and accepted by a committee set up by VRA. Final Contract negotiations were completed in May. Owner's Engineer will assist VRA with the supervision of the EPC to ensure that the project is built to specification and provide any service if need be.

### Activities

- VRA finalized and signed the Owner's Engineer Contract with Tractebel Engineering on July 7, 2020.



## 5.5 PERMITS

**Siting Permit:** Energy Commission issued the siting permit on September 18, 2020. The permit will expire on September 17, 2021.

**Grid Interconnection Permit:** VRA submitted the relevant documents to Ghana Grid Company for the Grid Interconnection Permit. Additionally, drawings on the transmission line route was issued for GRIDCO's no objection on September 23, 2020.

**Dam Safety License:** Payment was made to Water Resources Commission (WRC) on August 10, 2020 for Dam Safety Registration.

## 4.0 PROGRESS DURING THE YEAR (2020) EPC

### Activities

- Work on the pre-commencement site activities are substantially complete. The scope of work undertaken included the repair of access road to the site, geological investigations, topographical survey and construction of workers' temporary camp.
- A total of 40 Ghanaians and 7 Chinese worked on the pre-commencement activities.



Access Road to the Site Repaired



Temporary Workers' Camp Completed

## 4.1 ESIA AND RAP

### Activities

- Fieldwork for the update of the ESIA and the preparation of the RAP, which commenced on July 10, 2020, has been completed. ESIA/RAP Consultant could not submit draft ESIA report by December 14, 2020 as planned. Reports for ESIA and RAP are expected to be submitted in January 2021 and February 2021 respectively.
- ESIA Scoping Report for the solar component of the project has been completed by VRA's Environment & Sustainable Department (E&SD) and will be submitted to the Environmental Protection Agency in January 2021.
- A proposal was received from the University for Development Studies (UDS) on December 14, 2020 for a team of specialists to carry out a comprehensive and independent review of the RAP and advise VRA accordingly. The key objective is to ensure that the RAP addresses the specific needs of the Project Affected Persons (PAPs) and that its implementation does not make resettlement communities worse off.

## 4.2 LAND SURVEY

### Activities

- The demarcation and pillaring of the acquisition area has been completed.
- All three (3) survey firms (Messrs. Rudan Engineering, A-M Surveys, Losamills Consult) have submitted their completion reports and input data to the Survey and Mapping Division (SMD) of the Lands Commission for the preparation of the cadastral plan to commence.

#### Pillaring & Demarcation

ACTIVITY	NUMBER PLANTED	PERCENTAGE	DISTANCE
Pillaring of Acquisition Area	1,236 Type 'A'	100%	460.93km

- Land Valuation Division (LVD) also commenced work in July 2020 on referencing of properties and valuation of farmlands in the project area towards payment of compensation in order to acquire the land.
- This activity was suspended in September 2020 due to flooding in the project area and is scheduled to resume in January 2021.

#### Referencing & Valuation

ACTIVITY	NUMBER COMPLETED	NUMBER OF COMMUNITIES COMPLETED/SETTLEMENTS
Household Survey	2,453	77
Community Meetings/Focus Group Discussions (FGDs)		70
Farmlands Surveyed	11,837 (Acres)	11
Structures Enumerated	356	11

The surveying and enumeration of farmlands and structures were done in the Kulunga, Kparipiri, Suhuluya, Gubeo, Digaari and Kpatusi.



Socio-economic survey and enumeration of structures



Survey of Farmlands – Consultant interviewing a land owner through an interpreter



VRA ESD team on a visit to assess progress of survey work



## 4.3 OWNER'S ENGINEER

- The Owner's Engineer (OE) issued their advance and down payment guarantees and submitted their corresponding invoices in September 2020 for payment. These payments were contractually to be made by October 17, 2020.
- VRA Management decided to delay the payment since the OE services were linked to the actual works under the EPC Contract – which were yet to commence – and synchronize it with the advance payment for the EPC Contractor, which is to be paid by Government.

## 4.4 PERMITS AND LICENSES

- The Water Resources Commission granted the project its Dam Safety Registration License within the quarter
- GRIDCo reviewed VRA's application for interconnection to the National Interconnected Transmission System (NITS) and submitted its Grid Impact Study report. The key conclusion of the report is that, the Hydro and Solar PV plants under the project when interconnected to the national grid would not have any adverse impact on the stability of the NITS.

## 4.5 RENOVATION WORKS CONTRACT

- PowerChina was awarded a contract to renovate VRA's institutional houses in Bolgatanga and Tema for use by the project team.
- The Letter of Acceptance (LOA) for the renovation works was issued to the Contractor and signed on October 26, 2020.
- Drafting of the renovation works contract was finalised within the quarter and was signed by the Parties on December 16, 2020.
- Work on the Tema building, which will serve as the Project Directorate, commenced in November 2020 and is progressing steadily.



Renovation Work - Tema

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