

# Environmental and Social Monitoring Report

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Semi Annual Report  
May 2020

## VAN: Energy Access Project

Prepared by the Vanuatu Project Management Unit for the Vanuatu Government and the Asian Development Bank.

This environmental and social monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, ADB does not intend to make any judgements as to the legal or other status of any territory or area.

# **Semi-Annual Environmental and Social Safeguards Monitoring Report**

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ADB Loan: LOAN 3572 VAN

## **Vanuatu Energy Access Project**

Period: July– December 2019

Prepared by Stantec and VPMU for the Asian Development Bank.

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## ACRONYMS

ADB	Asian Development Bank
AP	Affected Persons
BHP	Brenwe Hydropower Plant
CLTA	Customary Land Tribunal Act No. 7 (2001)
COTA	Custom Owners Trust Account
DEPC	Department of Environmental Protection and Conservation
DOL	Department of Lands
DOE	Department of Energy
DSC	Design and Supervision Consultant
ESS	Environment and Social Safeguards
IEE	Initial Environmental Examination
GoV	Government of Vanuatu
LARP	Land Acquisition and Resettlement Plan
MIPU	Ministry of Infrastructure and Utilities
MFEM	Ministry of Finance and Economic Management
MLNR	Ministry of Land and Natural Resources
MOA	Memorandum of Agreement
RP	Resettlement Plan
RF	Resettlement Framework
SPS	Safeguard Policy Statement
USD	United States Dollars
VEAP	Vanuatu Energy Access Project
VPMU	Vanuatu Project Management Unit

# **1 INTRODUCTION**

## **1.1 Background and Purpose of the Report**

1. The Vanuatu Energy Access Project (VEAP) under the ADB Loan: LOAN 3572 VAN was approved by the Asian Development Bank (ADB) and Government of Vanuatu (GoV) in October 2017. Stantec New Zealand (Stantec) has been appointed in July 2018 to the role of design and supervision consultants (DSC) to provide support to the Vanuatu Project Management Unit (VPMU) in the delivery of VEAP.
2. The present report is the third semi-annual Environmental and Social Safeguards Monitoring Report prepared for the VEAP. It also complies with the ADB Safeguard Policy Statement (2009) and Access to Information Policy 2018 and government requirements for projects, with regards to implementation, monitoring and information disclosure.
3. This report has been prepared by VPMU on behalf of the GoV to document progress of the social and environmental safeguard requirements to be undertaken during implementation of the project. Over the reporting period the project was in its Pre-Construction phase.

## **1.2 Description of the Project**

4. The VEAP comprises three infrastructure components:
  - Brenwe hydropower plant (BHP) construction, commissioning and transmission Line – the BHP is envisaged to provide in excess of 90% of the total generated energy for the Malekula grid through to 2040. The transmission line will connect BHP to the existing Lakatoro distribution grid on Malekula.
  - Distribution grid extensions in north-west Malekula.
  - Distribution grid extensions from Turtle Bay to Port Olry on Espiritu Santo.
5. The 400kW, run-of-river BHP currently consists of the following elements:
  - Intake structure.
  - 0.8 km headrace canal.
  - Forebay structure and spillway.
  - 175-meter steel penstock.
  - Turbine powerhouse, switchgear and transformer.
  - 21 km transmission line (20 kilovolts).
  - Tailrace.
  - Access roads.
6. BHP is located on the River Brenwe in north-west Malekula. The infrastructure was partially constructed in the 1990's by China Chang Jiang Energy Corp (CCJEC), however construction was never completed. The location of the new BHP is envisaged to be at the same location as the earlier abandoned BHP. To facilitate construction, access roads will need to be rehabilitated

and/or constructed to the different areas of the project site. The main powerhouse access road is currently envisaged from the north-west Malekula highway, along the west bank of the River Brenwe.

### **1.3 Project Safeguard Requirements**

7. The project safeguard requirements include compliance with both the GoV country safeguard system (CSS) and ADB SPS. The key documents of the CSS relevant to environmental aspects of the project include the need for an Environment Permit (EP) from the Department of Environmental Protection and Conservation (DEPC) and a Water Works Permit from the Department of Water Resources (DoWR). The project must also comply with a range of statutory requirements pertaining to land acquisition. A list of the key legislation related to the country safeguard system is provided in Annex 1.
8. ADB's requirements include compliance with the approved updated Initial Environmental Examination (IEE) and associated Environmental Management Plan (Feb 2019) included in the projects contract documents and the approved project Resettlement Plan.
9. VPMU and Department of Energy (DoE) are responsible on behalf of the GoV to ensure that all the requirements of the CSS and ADB SPS as specified in ADB Loan: LOAN 3572 VAN (the Loan Agreement) are properly implemented throughout project implementation.
10. In respect to the Loan Agreement the Project Administration Manual (PAM) outlines under Safeguards Monitoring and Reporting that: "The VPMU will prepare quarterly monitoring reports...which will provide information necessary to update ADB's project performance reporting system:"
  - Project Performance Monitoring - The quarterly monitoring reports will include environmental and social safeguard monitoring reports;
  - Land Acquisition/Resettlement - Semi-annual monitoring reports will be submitted to ADB which includes reporting on progress of activities in the implementation of the Resettlement Plan (RP) with particular focus on public consultations, land acquisition, payment of compensation, and level of satisfaction among affected persons.; and
  - Environment –
    - i. Before commencing civil works, the contractor will prepare a site specific EMP (SEMP), or Contractor's Environment Management Plan (CEMP), which will establish how the contractor will comply with the EMP safeguard requirements. Monitoring of the Contractor's works will be undertaken by the resident engineer with assistance of the PMU's safeguards officer and supported by the DSC. Monitoring will also be carried out independently by the Department of the Environmental Protection and Conservation (DEPC), as well as ADB missions.
    - ii. Semi-annual safeguard monitoring reports will be submitted to ADB which will cover a summary of the Contractor's monthly reports, details of monitoring data collected,

and analysis of monitoring results, recommended mitigation measures, environmental training conducted, and environmental regulatory violations.

## **2 IMPLEMENTATION ARRANGEMENTS**

11. VPMU is managing implementation of the VEAP on behalf of the DoE for the GoV. VPMU staffing for VEAP includes:

- International Project Manager (IPM - consultant)
- National Project Manager (NPM)
- Environmental and Social Mitigation Officer (ESMO)
- International Environment Specialist (IES – Consultant)

12. The VPMU project team are supported by the DSC which comprises the following:

- Project Manager
- Resident Engineer
- International Environment Specialist
- National Environment Specialist
- International Social Safeguards Specialist
- National Social Safeguards Specialist

13. The role of VPMU's ESMO with assistance from the IES and support of the DSC's safeguards team, is to ensure that all the safeguards requirements of the VEAP are implemented effectively as set out in the Project Administration Manual (PAM) and construction contract documents.

14. ADB has a project team overseeing the project which includes the Extended Mission Vanuatu office and staff from HQ and SPSO in Fiji.

## **3 ACTIVITIES AND STATUS OF SAFEGUARD COMPLIANCE**

### **3.1 VEAP Progress Update**

15. The DSC contract was awarded in July 2018 to Stantec and this progress report for this reporting period is to be read in conjunction with the semi-annual safeguards monitoring reports (SMR) for July to December 2018 and January to June 2019.

#### **3.1.1 Bid Process and Contract Award**

16. Tender 01/2019 (Brenwe Hydropower Plant) and Tender 02/2019 (Transmission and Distribution) closed on 20th June 2019.

17. Tender 01/2019

- Bid opening of the 1st envelope (Technical) opening was conducted on 20th June 2019 for 4no. submitted bids.
- Bid Evaluation for 1st envelope was completed and Bid Evaluation Report (BER) Technical was issued on 01st October 2019. Of the 4 bidders, only 1 was evaluated as responsive, MAP/VORTEX consortium.
- 2no. Bidders were deemed non-responsive to the environmental evaluation criteria defined in section 3 of the bid documents.
- Bid opening of the 2nd envelope (Price) opening was conducted on 17th October 2019.
- Bid evaluation for 2nd envelope was completed and BER Price was issued on 08th November 2020. MAP Vortex were notified as successful bidder on 14th November 2019.

#### 18. Tender 20/2019

- Bid opening was conducted on 20th June 2019 for 2no. submitted bids.
- Bid Evaluation for 1st envelope was completed and BER Technical was issued on 11th December 2019. ADB approval is outstanding.

### 3.2 ENVIRONMENTAL AND SOCIAL SAFEGUARDS

19. The following safeguards activities were undertaken during the reporting period:

#### 3.2.1 Environmental Safeguards

20. Following the update of Initial Environment Examination (IEE) on 08th February, there were recommendations for further work regarding the minimum environmental flow for the Brenwe River.

- As requested by VPMU, Stantec produced a Terms of Reference (TOR) for further ecology and hydrology investigations.
- As approved by ADB procurement, Stantec approached NZ National Institute of Water and Atmospheric Research (NIWA) for a single source quote.
- Costs (circa US\$400,000) were deemed to be too great for the project budget if the full investigation to be undertaken during the design phase. The decision was made to defer the works until the construction phase (envisaged January 2020 or later), when available budget will be re-assessed.
- The IEE was included in the Contract Documents for Brenwe Hydropower Plant (Article 1.1m1) and as noted above the requirement for further ecological and hydrological studies was deferred until commencement of detailed design.

21. The following environmental safeguards activities are recommended during the next reporting period:

- Inductions to VEAP safeguards to Contractor (awareness raising and introductory training);
- Update IEEs following detailed design presented by Contractor;
- Review Contractor's CEMP and work with Contractor to complete CEMP for approval by VPMU and ADB.

### 3.2.2 Social Safeguards

22. The MALAMPA Secretary General assigned Mr. Lapi Kalmet as project liaison officer to support the communication and social liaison works between GoV, VPMU, DSC and Contractor on Malekula.
23. Following update of LARP on 11th June 2019, the bid documents were amended with Bid clarification 4. The LARP was included in the Contract Documents for BHP (Article 1.1m2).
24. No further land acquisition discussions have been undertaken during this reporting period. All purchases and MOA's are in place to cover the Brenwe Hydropower Contract.
25. Land acquisition discussions regard the Transmission and Distribution lines are yet to take place. These are envisaged to be undertaken early 2020 following confirmation of the Bid Evaluation Report (BER) findings.
26. The following implementation schedule has been replicated from the LARP.

**Table 1: Implementation Schedule**

N°	Activities	Progress / date completed
1	Confirmation of land requirement and consultation/information disclosure with landowners/APs	Completed
2	Land survey and valuation	Completed
3	Confirmation of landowners by the Customary Lands Management Office (CLMO)	Completed Appeal with Supreme Court for Tervaut land complete.
4	Submission to Department of Lands (DOL) of land survey report and to prepare for formal negotiation with landowners/APs and budget allocation for land acquisition	Land Survey Report submitted Valuation reported to APs
5	Negotiation with landowners/APs: consultation with affected landowners to negotiate for land acquisition/purchase.	MOA with each land claimant to proceed with project until ownership is determined (December 2017) MOA for access roads has been signed with landowners (February 2019).
6	Agreement on land acquisition/purchase and approval by the government on allocation and release of fund for land	Valuation done and given to land claimants.

N°	Activities	Progress / date completed
	compensation payment	1 claimant lodged objection to valuation.
7	Vanuatu Project Management Unit (VPMU) in coordination with Department of Energy (DOE) and DOL updates the LARP including agreements on compensation rates with landowners and discloses updated LARP to APs.	September 2017, September 2018, and ongoing. VPMU update undertaken June 2019 and cleared by ADB
8	VPMU submits the updated LARP to ADB for approval and posting on ADB website	Latest Update cleared by ADB in June 2019 and posted including DOE and DOL
9	Execution of land acquisition and payment of compensation	Compensation has been transferred to the Customary Owners Trust Account (COTA) and landowners advised.
10	VPMU submits to ADB a land acquisition and compensation completion report	Process not yet complete
11	VPMU submits safeguard monitoring report	These semi-annual reports, ongoing

27. The following social safeguards activities are recommended during the next reporting period:

- Reference design and contract documents reflect the MOA for access (outside of the 30Ha boundary). These will need to be revisited post-contract award to ensure the Contractor's design is linked to the agreed MOA's and that no further complications have been identified in the period.
- Update the LARP: The updated LARP was cleared by ADB in June 2019 and included as an amendment to the bid documentation. Following Contract Award, the EPC Contractor will need to review and update as appropriate to their method. VPMU and DSC safeguarding specialists will monitor the progress of the contract award and liaise with the Contractor to support them in successful implementation of social safeguards.
- VPMU to undertake additional consultation with local communities (envisaged post contract award, pre mobilization to site) -, including project awareness, consultation on impacts and employment opportunities, impacts management, benefit sharing. Particular attention will be directed to establishing a mechanism that will increase the capacity of vulnerable groups to effectively get actively involved in the project, particularly for newly connected households, as per the Capacity Building component for newly connected households detailed in the Project Administration Manual.
- VPMU and other relevant agencies to continue consultations with local communities on transmission lines corridors, infrastructure placement, and transmission construction impacts and their management as the design and construction progresses.
- Update of Brenwe Hydropower Plant land acquisition and livelihoods plan, with any follow-up consultations with Affected Persons (AP).

- Land and land use ownership issues:
  - i. Land and asset owners need more information and clarity on the acquisition and compensation process – whether it be by MOA, lease, or formal acquisition. Lack of resolution of ownership questions create risks of local conflict, perceived injustices, and potential distrust of government and government officers/agencies - which are a risk to the project.
  - ii. The above relates to the access roads that fall outside of the 30Ha boundary previously purchased by GoV for the scheme. Access roads will be required to cross claimant land from the public highway corridor to the 30Ha boundary.
- Begin an assessment of the social impacts of the Santo network extension (if contract is awarded).

### 3.2.3 Country System Clearances.

28. VPMU lodged the application for environmental permit with DEPC and a water works permit with DoWR, based on the information in the ADB cleared bid documentation.

29. The followings permits were subsequently issued:

- 8th November 2019 – ENY/304/ER/119/2019 – Environmental Permit (**See Annex 2**)
  - The Permit Holder is VPMU, this will need to be transferred to the Contractor (when awarded) for the construction period.
  - The Permit makes note of the following approvals that may be required by the Contractor:
    - The consent of the custom land owner;
    - A land lease of a suitable class
    - Foreshore development consent from the Minister of Internal Affairs
    - A building permit and planning permission from the relevant municipal or provincial council
    - A water works or water use permit from the Department of Water Resources
    - A quarry permit from the Commissioner of Mines
    - Customs and quarantine approvals from Biosecurity Vanuatu and the Department of Customs and Inland Revenue
    - An authorization from the Department under the Ozone Layer Protection Act No. 27 of 2010 to, for example, import air conditioning or refrigeration equipment containing controlled substances.
- 21st November 2019 - VAWP 005/2019 – Water Works Permit (**See Annex 2**)
  - The permit is valid for MAP/Vortex as the Contractor, for construction works associated with BHP.

- The permit is valid until November 2020, and will need to be renewed by the Permit Holder.

### **3.2.4 Capacity Building**

30. The DSC will develop a plan for capacity building once the construction contract is signed.

## **4 Grievance Redress**

31. A grievance redress mechanism (GRM) has been established by VPMU for the pre-construction and construction phase. Details of the process are outlined in the EMP, LARP and the project's Communication and Consultation Plan (CCP).

32. In addition the EMP and contract documents require that the construction EMP (CEMP) to be prepared by the contractor, integrate the relevant elements of the GRM and CCP that are to be implemented by the contractor.

33. Statistics of complaints received and managed:

Total number received in 2018	2
Total number closed out in 2018	1
Total number still open as at Dec 31, 2018	1
Total number still open as at June 30, 2019	Nil
Total number still open as at December 31, 2019	Nil

34. No grievances were recorded in the reporting period Jul-Dec 2019.

## **5 Stakeholder Consultations**

### **5.1 Summary of consultation plans with stakeholders over the next year**

35. The CCP will be updated to reflect the pre-construction phase and construction phase of the project, in the Brenwe area, along transmission line and at distribution line destinations. VPMU will update the existing CCP with review/ support from Stantec once the Contractor is signed up.

## **6 Summary and Conclusions**

36. The VPMU has completed the Land Acquisition process and monies have been transferred to COTA as agreed with the Customary Landowners. The Landowners have been advised to prepare their applications to the CLMO to attain the green certificate prior to release of monies to them.
37. In addition, the VPMU has entered into a MOA with the respective landowners for the access roads into the project site and this has been completed.
38. Environment Permit and Water Permit have been issued for the Project.
39. The VPMU with the support of the GoV departments and the DSC will continue the Communications, Consultations and Participation Plan are implemented to all stakeholder levels throughout all phases of the project.
40. The IEE and LARP will need to be revisited by safeguarding specialists post contract award and assist the Contractor in development of the CEMP.
41. The next SMR is due for period Jan-Jun 2020 and will be submitted by VPMU by end of July 2020.

**ANNEX 1**  
**Statutory Requirements Applicable to the Project**

**National requirements:**

- Land Acquisition Act of 1992 and 2000 which establishes procedures to acquire land for public purposes or easements, including compensation for acquiring land;
- The Land Acquisition (forms) Regulations No 32 of 1994;
- Land Reform Act 35 (1980 and updated 1981, 1983, 1985, 1992, 2000 & 2013);
- Customary Land Management Act No 33 of 2013;
- Valuation of Land Act N° 22 (2002);
- Land Surveyors Act N° 11 (1984);
- Land Leases Act (1983) and Amendment (2014);
- Environmental Protection and Conservation Act 2002 (CAP 283 the Environment Act);
- Environmental Impact Assessment Regulations Order no. of 2011;
- Water Resource Management Act;
- Vanuatu Electricity Supply Act 2006;
- Health and Safety at Work Act; Volume 47 (CAP 195);
- Preservation of Sites and Artefacts; Volume 39 (CAP 39);
- Custom Land Management (Amendment) Act No. 12 of 2014;
- Mines and Minerals Act 1986 (all quarried material must be from approved quarries only);
- Mines and Minerals Act, Quarry Permit Regulation. Order No. 8 of 2005;
- Public Road Act 2013;
- Employment (Amended) Act 2010; and
- Road Traffic (Control) Act.

**International obligations:**

- i. Vanuatu is a signatory to several international agreements. Listed below are some of the more applicable agreements to the project activities:
  - The Convention on Biological Diversity (CBD); 1992;
  - The United Nations Framework Convention on Climate Change (UNCCD); 1992;
  - Agreement Establishing the South Pacific Regional Environment Programme (SPREP); 2005;
  - Convention on the Elimination of all Forms of Discrimination Against Women.

**ANNEX 2**  
**Environment Permit and Water Works Permit**

**DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
AND CONSERVATION**

Private Mail Bag 9063  
Port Vila  
REPUBLIC OF VANUATU



**BUREAU DE LA PROTECTION DE  
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Tel: (678) 25302 / 33430

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DEPC reference: ENV/304/ER/119/2019

Friday 8 November 2019

The Director  
Vanuatu Project Management Unit  
P. O. Box 192  
Port Vila  
EFATE

Dear Mr Benjamin Shing

**Environmental Permit for the construction and establishment of hydro-electric power at Brenwe, Malekula**

I refer to your application for an Environmental Permit for construction and establishment of hydro-electric power at Brenwe, Malekula, received by the Department of Environmental Protection and Conservation (the Department) on 28 May 2019.

As the Director of the Department, I am required to undertake a Preliminary Environmental Assessment (PEA) of your application. The purpose of the PEA is to screen your application and determine if your project requires an Environmental Impact Assessment (EIA) report.

After assessing your application, I have determined that an EIA report is not required. Your project, as described in the **enclosed** Environmental Permit, is approved providing you agree to follow the conditions stated in the Environmental Permit. Starting your project is taken to be your acceptance of the conditions of the Environmental Permit.

In making my decision I have taken into account:

1. Your application
2. The Preliminary Environmental Assessment (PEA) conducted on 4 November 2019
3. Whether your project is likely to cause any environmental, social or custom impact
4. The significance of any identified impact



5. Whether any proposed action is likely to effectively mitigate, minimise, reduce or eliminate any identified significant impact.

As part of carrying out the activities authorised under your Environmental Permit you are responsible for ensuring that your staff and sub-contractors comply with the Environmental Permit. Any non-compliance by staff or sub-contractors will be considered as a breach of your Environmental Permit by you and the Department will take further action as appropriate.

**Please note:**

1. Departmental officers may visit your site for monitoring activities. Departmental officers are authorised to do so under section 42A of the *Environmental Protection and Conservation Act* [CAP 283] (the EPC Act) and clause 22 of the *Environmental Impact Assessment Regulations*.
2. You are authorised to carry out the activities listed in the Environmental Permit only. If you wish to change your activities you will need to apply to amend your Environmental Permit.
3. Failure to comply with the terms and conditions of your Environmental Permit is an offence against the EPC Act and carries with it significant penalties.
4. Your Environmental Permit is for the purpose of the EPC Act only. Depending on the nature of your project, you may need other environment-related approvals. As the project proponent, you are responsible for ensuring that any other approvals, permits, licenses, agreements, authorities or permissions required under any other laws of the Republic of Vanuatu are obtained before any activities are carried out. The approvals etc. you need will vary depending on the nature of your project but may include:
  - a. The consent of the custom land owner
  - b. A land lease of a suitable class
  - c. Foreshore development consent from the Minister of Internal Affairs
  - d. A building permit and planning permission from the relevant municipal or provincial council
  - e. A water works or water use permit from the Department of Water Resources
  - f. A quarry permit from the Commissioner of Mines
  - g. Customs and quarantine approvals from Biosecurity Vanuatu and the Department of Customs and Inland Revenue
  - h. An authorisation from the Department under the *Ozone Layer Protection Act No. 27 of 2010* to, for example, import air conditioning or refrigeration equipment containing controlled substances.

Should you require any further information, please contact Mrs Naomay Tor, Principal Officer- Environmental Impact Assessment, on the above number or via email [njtor@vanuatu.gov.vu](mailto:njtor@vanuatu.gov.vu)

Yours sincerely,



Donna Kalfatak  
**Director**

Department of Environmental Protection and Conservation



Encl: Environmental Permit

# Environmental Permit

*Environmental Protection and Conservation Act*  
[CAP 283]  
Section 14



**Permit number** ENV/304/ER/119/2019

**Date issued:** 8 November 2019

**Date by which works must substantially commence:** 8 November 2020

**Holder:** Vanuatu Project Management Unit  
Of the Prime Minister's Office  
P. O. Box 192  
Port Vila  
EFATE

**Authorised activity:** For the purpose of the *Environmental Protection and Conservation Act* [CAP 283] only, this permit authorises you to:  
Construct and establish a hydro- electric power at a capacity of approximately 400kW only at Brenwe river, Brenwe, North West Malekula, MALAMPA Province.

**Definitions:** In this permit, unless the contrary intention appears, the terms used are as defined in the *Environmental Protection and Conservation Act* [CAP 283] or *Environmental Impact Assessment Regulations*.

## Conditions

### General:

1. All traffic to and from site must be managed to ensure no hazards to other road users.
2. Dust must be controlled to avoid nuisance to any neighbouring property, including gardens or habitations.
3. The discharge, dumping etc. of construction materials, oils, fuels, chemicals or wastes, including wash and waste water, to the environment is prohibited.
4. Working onsite is prohibited from 7pm to 5am.



5. In the event the authorised activities cease, all wastes and hazardous materials must be removed from the site and disposed of off-site at a licensed or Council approved waste disposal facility.

Staff and subcontractors:

6. Staff and sub-contractors must be made aware of the importance of environmental protection and must receive appropriate training.
7. Staff and sub-contractors must be made aware of the conditions of this Environmental Permit and must comply with all relevant conditions.
8. The site must be maintained in a tidy condition, free from litter and waste (whether arising from activities associated with the project or external sources).

Use of machinery:

9. Machinery must be serviced and maintained in good condition to avoid leakage and spillage of oil, fuel and other contaminants.
10. No machinery shall operate within the drip zone of any trees identified to remain on the site.
11. Imported machinery must be inspected by relevant authorities prior to shipment to avoid introduction of invasive species.

Site-specific conditions:

12. All contents of the Initial Environment Examination (IEE) submitted with the Application for Environmental permit, must be complied with in full.
13. Environmental Management Plan Section VII, pages 45 to 50, and Table 7.1, pages 51 to 67, of the IEE must be complied with in full.
14. Engineering design plans of the project must be submitted to the Department and approved, prior to preparation and commencement of works on site.
15. Contractor must submit Contractor's Environmental Management Plan (CEMP) to the Department prior to preparation and commencement of works on site.
16. Waste Management Plan, including all solid and liquid disposal arising from preparation and construction, must be prepared and submitted to the Department prior to commencement of works on site.
17. Traffic Management Plan on how the contractor will operate during preparation, construction and operation, must be prepared and submitted to the Department prior to commencement of works.
18. Fuel and other hazardous substances and bulk materials must be stored in a safe storage place.
19. Sufficient "fish passage" must be established during construction.
20. Intake weir and settling pond must have the capacity to accommodate storm flows and a flushing mechanism that will reduce frequent servicing.
21. During clearance of the site, trees must be avoided and the working zone must be clearly defined.
22. A freshwater assessment must be conducted at the site prior to preparation and during operational phases to determine the sensitivity of the ecosystem to flow changes and prolonged periods of low flow.

23. Nearby communities must be well informed of the project's daily operation during preparation, construction and operation.
24. Materials from demolition of existing abandoned weir, forebay and powerhouse structures must be used as construction materials or fill, as stated under civil works, page 8 of the Initial Environmental Examination.
25. Contractor must submit design plans for temporary laydown area with site office, for approval prior to commencement of works on site.
26. Works on site must not disturb any river users.
27. Water must be used to minimize dust and in such a manner that the run off will not threaten any water bodies, and the water itself must be recycled whenever possible.
28. Vegetation clearance for all components must be at minimal to minimize soil erosion.
29. Riparian vegetation must be maintained where possible.
30. Cut-off drains must be installed when excavating on steep slopes to divert run off around the work area.
31. Benching and other works in steep locations must be minimized to avoid massive disturbances by heavy machineries.
32. Cut slopes must be re-vegetated as soon as practicable to minimize the exposure of bare surfaces.
33. Gabion baskets must be placed along the river channel adjacent to the weir/ intake and sand trap and adjacent to the tail race to protect and stabilize the river bank.
34. Stockpile of construction materials must be placed at least 20 meters from any water bodies.
35. Construction site drainage must be effectively implemented such that run off of river diversions are directed to sediment traps prior to discharge to water courses.
36. In-river works and earth works must be scheduled in the drier months of the year.
37. Velocity controls must be in place to control and reduce any significant erosion of sedimentation risks in the river.
38. Any construction materials, including sand or quarried, must be made known to the Department in writing, prior to any arrangements for shipment.
39. Any changes to the IEE, must be made known to the Department in writing and a new IEE must be submitted to the Department.
40. Any changes to the design of the project, must be made known to the Department in writing.



**Donna Kalfatak**  
**Director**

Department of Environmental Protection and Conservation



Date: 11/11/2019

GOUVERNEMENT  
DE LA  
REPUBLIQUE DU VANUATU

DEPARTEMENT DES RESSOURCES EN EAU

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GOVERNMENT  
OF THE  
REPUBLIC OF VANUATU

DEPARTMENT OF WATER RESOURCES

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## **WATER WORKS PERMIT**

**PERMIT NO. VAWP 005/2019**

**VANUATU ENERGY ACCESS PROJECT (VEAP)**

**MALAMPA PROVINCE**

**WATER PERMIT FEE: 50,000VT**

## **SCHEDULE 1**

### **REPUBLIC OF VANUATU**

### **WATER WORKS PERMIT**

**Permit NO. VAWP 005/2019**

1. The Director, exercising his powers under section 14 in the Water Resources Management Act No. 9 of 2002, of the Laws of the Republic of Vanuatu ("The Act"), hereby grants extension to

**Vanuatu Energy Access Project**

**CONTRACTOR: MAP PROJECTS LTD AND VORTEX GROUP LTD**

The right to water works for the purpose of:

#### **CONSTRUCTION OF BRENWE RIVER HYDROPOWER SCHEME**

In the areas and/or sites as set out in Annex 1 for a period of **1 year**

Beginning 21<sup>st</sup> of November 2019 and ending 21<sup>st</sup> of November 2020

2. The permit is subjected to the conditions and provisions of Annex 1, as well as the conditions imposed by law.
3. The permit holder shall pay to the Department of Finance Cashier a fee of **50,000VT** being for the permit. The payment being made on the issue of the permit for the year in which the permit is issued.
4. The Water works Permit is specifically for construction of Brenwe River Hydropower Scheme

**DATED this 21<sup>st</sup> of November 2019**

A handwritten signature in blue ink is written over a circular official stamp. The stamp contains the text "GOVERNMENT OF VANUATU" at the top, "DEPARTMENT OF WATER RESOURCES" in the center, and "DEPARTMENT DES RESSOURCES EN EAU" at the bottom.

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**DIRECTOR OF WATER**

## **ANNEX 1**

### **PROVISIONS AND CONDITIONS**

#### **1. WORK STATUS**

The construction of Brenwe River Hydropower Scheme

#### **2. WORKING BOUNDARIES**

Water works within the YELLOW said boundaries as shown below:



Water works/operations outside the prescribed boundaries are not permitted.

### **3. WATER WORKS CONDITIONS**

#### **CONDITIONS**

- A. The natural environment must be respected throughout the water works operations.
- B. Construction or operation activities that may produce contaminants, whether solid or liquid in nature, must not pollute any waters within the Brenwe Catchment area.
- C. A water quality monitoring plan must be developed and approved by the department before implementing it.
- D. Control measures must be in place to account for high sedimentation load during construction phase and high rainfall events
- E. Rights of Indigenous community to use water within the project boundary for domestic use must be respected
- F. All necessary precautions must be taken to ensure that the water works/operations, working site and its vicinity are kept safe at all times.
- G. At the end of the works, all machineries should be removed from the working site and the area restored.