

Environmental and Social Monitoring Report

Semi-annual Report

July 2017

Port Moresby Power Grid Development Project.

Prepared by PNG Power Limited for the Asian Development Bank.

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FICHTNER
GmbH & Co. KG



Loan Number: L2998/2999
Project Number: 43197-013
Report: Semi-annual

Semi-annual Environment & Social Monitoring Report

(Reporting Period: January to June 2017)

PORT MORESBY POWER GRID DEVELOPMENT PROJECT

Prepared by: PNG Power Limited for Asian Development Bank

Submission date: July 2017

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ABBREVIATIONS

ADB	Asian Development Bank
AP	Affected People
CBD	Central Business District
CEMP	Construction Environmental Management Plan
CEPA	Conservation and Environment Protection Authority
DEC	Department of Environment and Conservation
DLPP	Department of Lands and Physical Planning
DSC	Designated Site Contractor
EMP	Environmental Management Plan
EP	Environment Permit
EPAR	Environment (Prescribed Activities) Regulation 2002
ESA	Electricity Safety Awareness
FGLC	Fichnter GmbH Limited Consultant
FLT	Financial Literacy Training
GoPNG	Government of PNG
GRC	Grievance Redress Committee
HPP	Hydropower Plant
IEE	Initial Environment Examination
ILG	Incorporated Land Group
IPBC	Independent Public Business Corporation
KCH	Kumul Consolidated Holdings
kV	Kilovolt
LARP	Land Acquisition Resettlement Plan
LV	Low Voltage
NCD	National Capital District
NCDC	National Capital District Commission
MSK	Minimum Supply Kit
PAM	Project Administrative Manual
PMU	Project Management Unit
PNG	Papua New Guinea
PPGDP	Port Moresby Power Grid Development Project
PPL	PNG Power Limited
RCR	Resettlement Completion Report
RoW	Right of Way
PS	Sub-project
SPS 2009	Safeguard Policy Statement 2009
TD	Tender Document
TL	Transmission Line

1.0 INTRODUCTION

The Asian Development Bank (ADB) is supporting Papua New Guinea (PNG) to develop and expand its energy sector in the Port Moresby Power Grid Development Project (PPGDP) through a sovereign loan fund. The designated implementing agency is PNG Power Ltd (PPL), a fully integrated power authority responsible for the generation, transmission, distribution and retailing of electricity throughout Papua New Guinea. The project will upgrade and extend the transmission and distribution grid, improve substation capacity, as well as upgrade and rehabilitate two hydropower plants. It is aimed at reducing fossil fuel consumption, increasing access to energy supply and improving network reliability in the Port Moresby power grid.

2.0 BACKGROUND OVERVIEW

The Port Moresby Power Grid Development Project (PPGDP) is funded by ADB loan L2998/2999¹. The PPGDP agreement was signed between ADB, the Independent Public Business Corporation (IPBC)², and PPL on the 28th of May 2013. The loan and counterpart funding provided by the Government of PNG (GoPNG) is managed by PPL through its Project Management Unit (PMU). The PPL PMU has technical assistance from an international consultancy firm namely Fichnter GmbH Limited Consultant. The project intent is to achieve significant improvements in power generation, supply, efficiency, and reliability

The Port Moresby Power Grid Development Project is subdivided into six subprojects that entail significant investments into power, transmission, distribution, and generation. The project proposes the construction of new facilities and the rehabilitation of existing facilities serving Port Moresby. The ADB project safeguards categorization for PPGDP is Category B environmental and social component as per the Safeguards Policy Statement 2009 (SPS, 2009), because the potential adverse impacts are less likely to occur and mostly site specific, in particular Kilakila Substations whereby land acquisition is required and hydropower plants. The Transmission Line (TL) will also have a minor impact as a small area will be cleared for mounting of poles and the lines will run overhead with no impact to flora and fauna.

The project components are:

- i) Kilakila Substation and 66kV Transmission Line;
- ii) Substation Capacitor Addition;
- iii) Upgrade of 11kV System to Open Loop Mesh;
- iv) A) Loss Reduction Program; B) Energy Access;

¹ ADB Loan L2998/2999: Port Moresby Power Grid Development Project.

² IPBC is now known as Kumul Consolidated Holdings (KCH).

- v) Rouna 1 Hydropower Plant Rehabilitation & Upgrade;
- vi) Sirinumu Hydropower Plant Upgrade.

Subprojects (i) to (iv) will take place in and around the Port Moresby area in the National Capital District (NCD).

Subprojects (v) and (vi) are respectively located about 20km and 35km north east of Port Moresby along the Laloki River valley.

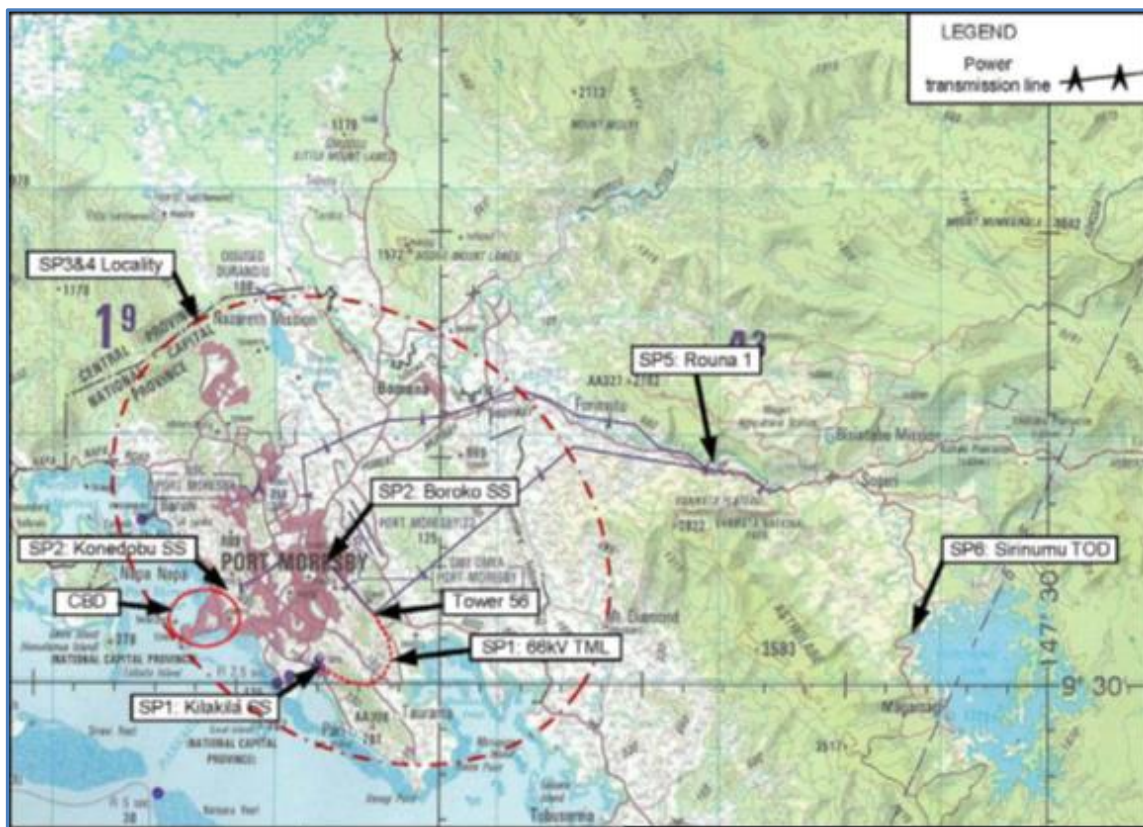


Figure 1: POM Power Grid Development Sites

3.0 MONITORING PURPOSE

Monitoring ensures that the PPGDP subprojects are socially and environmentally compliant to meet ADB’s safeguard requirements, as well as PNG government regulations on social and environmental sustainability; to reduce, minimise, mitigate and/or avoid adverse impacts at the project level. Therefore, negating or minimising the impact of the construction on the affected persons as well as the project sites.

4.0 METHODOLOGY

The methodology that is used to assess environmental and social risk activities are as follows:

- Review of CEMP identifying hazard and response in line with work activity on site.
- Project site visit
- Checklist inspection (per the EMP/CEMP guidelines)
- Clearance or revised response according to checklist result
- Data collated
- Site visit report and monitoring report.

5.0 PROJECT STATUS UPDATES

The table 1 shows the status updates for the PPGDP in this reporting period.

Table 1: PPGDP Subproject Status Update

PPGDP Subproject		Date	Status
1	Kilakila Substation and 66kV Transmission Line	19/06/17	Resettlement completed. Deed of Release and RoW registration still pending DLPP Surveyor General's signature.
		20/05/17	Environment Permit (EP) payment is completed and EP received by PPL already.
		08/05/17	Contract signed with Pestech company to start work.
2	Substation Capacitor Addition	Has moved to the Loss Reduction Team within PPL.	
3	Upgrade of 11kV System to Open Loop Mesh	05/06/17	LV Feeder Survey completed by PMU
		06/17	CBD Switching Station land yet to be confirmed
		06/17	No response received from ADB to Commercial TDs issued on 28/10/16. ADB committed to return documents by 17/02/17.
4	A) Loss Reduction Program;	Has moved to the Loss Reduction Team within PPL	
	B) Energy Access	06/06/17	Memo for the notification of additional connections to each feeder, location and load increase estimate per feeder was circulated for signature/approval.
		03/17	Electrical Safety Awareness to new customers completed.
		05/17	Financial Literacy Training completed for 5 selected villages.

5 & 6	Rouna 1 Hydropower Plant Rehabilitation and Upgrade; & Sirinumu Hydropower Plant Upgrade	06/17	Technical evaluation still ongoing; after bidders were required to submit clarifications.
		18/05/17	CEPA site visit to Sirinumu and Rouna 2 done for environmental permit amalgamation/audit. Reschedule for future visit of Rouna1/3 and Rouna 4.

6.0 MONITORING RESULTS AND FINDINGS

In both the environment and social safeguards monitoring of the project there has been no adverse impacts and or negative responses from the APs during this reporting period. The general sentiment from the public and AP is that they are looking forward to the commencing of construction of each subproject. They want to see work taking place which will also benefit them through employment opportunities. PMU has a good working relationship with CEPA that has adhered to their compliance requests and instructions. No complaints or setbacks in regards to environmental safeguards have been recorded within this period.

7.0 SOCIAL SAFEGUARDS MONITORING COMPONENT

7.1 SP1 Land Acquisition and Resettlement Outcome

The Land Acquisition and Resettlement Plan (LARP) was completed in August 2016 followed by the completion report that was prepared by PPL PMU and disclosed on ADB website in September 2016. There has been no landowner or AP grievance received by PPL within this reporting period. PPL has an amicable relationship with VAGA³ ILG and maintains regular community consultation through site visits at the project site. PPL safeguards officer continues to do consultation through community awareness and training programs that are currently been implemented in communities of Central province where the project site is located.

8.0 ENVIRONMENTAL SAFEGUARDS MONITORING COMPONENT

All subprojects under PPGDP have had an Initial Environmental Examination undertaken during the pre-feasibility stage with the conclusions from these studies remains unchanged. With the CEPA permit process additional assessments were done to each subproject to classify the level of activity under the PNG Environment Act 2000 and Environment (Prescribed Activities) Regulation 2002. The outline of activity level for each is given in the table 2 below:

³ VAGA is clan that owns the land at Kilakila sub-station. PPL has completed all due payment of K750,000 to VAGA ILG as payments for the piece of land earmarked for the power substation (refer to the Social Monitoring Report, September 2016, ADB website).

Table 2: PPGDP Regulatory Compliance

PPGDP Subproject		CEPA		ADB	
		Classification under EPAR	Environmental Assessment	Category under SPS	Environmental Assessment
1	Kilakila Substation and 66kV Transmission Line	Level 2	EMP	Category B	IEE & EMP
3	Upgrade of 11kV System to Open Loop Mesh				
	B) Energy Access				
5 & 6	Rouna 1 Hydropower Plant Rehabilitation and Upgrade; & Sirinumu Hydropower Plant Upgrade				

8.1 SP1 Environment Permit

On the 28th of January 2017, the Environment Permit for PPGDP SP1 Kilakila Substation and Transmission Lines was issued by CEPA. PPL being the 'permit holder'.

This was a culmination of 3 years of preliminary assessment. There was a delay in issuance of the EP however that was concluded on the 24th of January 2017 and the EP was granted forthwith to PPL.

The contractor for SP1, Pestech company was confirmed on the 8th of May 2017 and a copy of the EP will be disclosed to them once the contract becomes effective. The PMU will oversee the permit compliance during the duration of the project. The copy of Environment Permit for SP1 is attached as Annex 2.

8.2 SP3 Environment Permit

The EP for SP3 will specifically be for the construction of the CBD Switching Station located in Port Moresby. The land for SP3 has not been secured as yet. Once the land has been acquired the permit process will commence. The PMU is working closely with the PPL management to secure a piece of land for the CBD Switching Station. The progressive updates will be provided in the next reporting period.

8.3 SP4B Environment Issues

The energy access project SP4B will not require an EP according to its activity classification; however, an EMP will be drafted for use during construction which is scheduled to begin in November 2017.

8.4 SP5 & 6 Environment Permit

The permit for the Rouna Cascade, which is an amalgamation of Rouna 1-4 and Sirinumu power stations is yet to be rendered by CEPA as PPL has to undergo an environmental audit of the operations. Previously water use permits were issued by DEC (now known as CEPA) for each station. They all expired in 2008 except for Rouna 4 which expired in 2013. It is now upon the PMU under CEPA directive to combine all HPP permits into one EP for the cascade.

On the 18th of May 2017 a preliminary site visit was organised with CEPA to Sirinumu and Rouna 2. Unfortunately, due to time constraints we were unable to continue to Rouna 1, 3 and 4. This has been scheduled for July 2017 and this will lead on to the audit.

9.0 INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

PPL has been involved in community awareness program and training program to the AP and impacted communities during this reporting period. The aim is to carry out awareness on safety and use of electricity and disclose relevant information about the project updates to the stakeholders and communities. Also, it aims at engaging the people in groups and individuals to participate in the awareness and training for the benefit of the people.

9.1 SP4B Electrical Safety Awareness

The SP4B Electrical Safety Awareness (ESA) took place in 22 villages within the National Capital District and the Central Province, of Papua New Guinea: From the 27th of February to the 9th of March 2017. Main purpose of this awareness is to inform the people on the safety on using electricity.

Table 3: PPL Participants in ESA

Name	Designation
Donald June	Lead Project Engineer Distribution Pom Grid
Leilah Naris	Environmentalist Pom Grid
Philip Omaro	Land/ Social Safeguard Officer Pom Grid

Leonie Bellem	PPL Corporate Image & Awareness Officer
Steven Muri	PPL Approvals Officer
Karl Lolowa	Casual Electrician Pom Grid
Michael Iliam	Casual Electrician Pom Grid

9.2 PPL Awareness Program

PPGDP SP4B Energy Access will see the extension of the grid by connecting approximately 3000 households located within NCD & Central Province. They are those who are currently unable to afford the connection costs and will be supplied with a Minimum Supply Kit (MSK).

As per the PAM one of the action plans for the Gender and Social dimensions of the subproject is to “undertake training workshops in newly connected communities (at least 50% female participation) on electricity safety, operation of prepayment meters, energy efficiency, and household utility budgeting.”

SP4B will be rolled out towards the end of 2017 in 22 villages across NCD and Central. Power is already connected to all the villages however there will be a connection of additional customers to the grid. The Safeguard team chose to run awareness on electrical safety in each village prior to the connection. The topics presented were on:

- i. Safe usage of power outlets and extension cords.
- ii. Purchasing PPL approved electrical appliances.
- iii. Safety in regards to power lines and stay wires.
- iv. Standard PNG voltage rating

9.3 Objective of Awareness

Overall objective: To educate members of the communities involved in the project on how to live safely with power.

Specific objectives, participants will be:

- i. Able to identify power line danger;
- ii. Knowledgeable on purchasing quality approved electrical appliances;
- iii. Responsible and aware of electrical safety within their homes;
- iv. Capable of maintaining and operating their own MSK.

9.4 Discussions and Outcomes

The awareness was a first of its kind in the selected villages in Central province. The villagers were happy and delighted for the visit by the team. The people were very interested in the information that was presented by the visiting team.

Throughout the awareness campaign at the different locations that the team visited, there has been the same recurrent issues encountered during the meetings. These complaints were brought up by the villagers. They are listed below

- a. Consideration
 - a) Faulty esipay meters
 - b) Low voltage
 - c) Delayed response from customer care on issues/complaints
 - d) Frequent and/or long blackouts
 - e) Freezer goods going bad due to long blackouts

There were also questions on the MS kit itself. This has brought up another issue of PPL having to do its own awareness on the instalment and use of the MSK. Especially to customers in the villages and settlements. The two common queries shared by many are listed below:

- ✓ Why MSK is being used for village dwellings and not the esipay system?
- ✓ The extension cords used with the kits may be a safety hazard.

The awareness also allowed the team to inform the community on the progress of PPGDP thus fulfilling part of its public information disclosure component.

In regards to gender equity and participation, the team noted that there is at least 50% of women attending these meetings, which was good sign. Some of the women folks even asking more questions than the men folks.

9.5 Follow up Action Plan to Support Awareness Objectives

- PPL to schedule awareness programs that focus on electrical safety. These presentations would be more comprehensive and tailored to the area.
- When the MSK project is being carried out; a thorough test and check on the MSK will be done once installed will be done by the project engineer. This will also include advice on how to operate the kit safely to each household.



Figure 2: Community Awareness Pictures

9.6 SP4B Financial Literacy Training

The Financial Literacy Training (FLT) was an initiative of the PMU to fulfil an economic empowerment requirement of the 'energy access' subproject, which was stipulated in the PAM. The PMU in partnership with the Bank of South Pacific conducted the training from the 22nd to the 26th of May 2017 within 5 villages of NCD and Central Province. They are Kilakila, Kerekadi, Gereka, Porebada and Taurama. These villages are some of the communities that will be connected with power under SP4B Energy Access. The training was mainly on budgeting and saving and how best to manage personal finances.

BSP ran the training with their own expertise, while the PMU provided logistical support. Presentations were done on power point. See attached 'training schedule' as Annex 1 for list of BSP participants. Below is a list of the PPL participants:

Table 4: PPL Participants in FLT

Name	Designation
Donald June	Lead Project Engineer Distribution Pom Grid
Leilah Naris	Environmentalist Pom Grid
Lesley Mike	Graduate Engineer
Michael Iliam	Casual Electrician Pom Grid
Joseph Akai	Casual Electrician Pom Grid

9.7 Discussions and Outcomes

- The BSP Financial Literacy Training was a first of its kind in the selected villages in Central province. The villagers were happy about the visit of the Electricity Awareness team, and shown keen interested in the information that was presented.
- The villagers appreciated the information presented on budgeting and saving. They were taking notes and asking questions throughout the training.
- The training also allowed the PMU to update the community on the status of the project as part of community consultation and disclosure of information to the public.
- In regards to gender equity there was at least 50% women in attendance at these programs on the day, as well as a good number of children. At Kerekadi, a whole primary school class came out to listen to the program as the teacher deemed it suitable for them to attend.
- Refreshments were also provided to the participants by the PMU at each village. They were very appreciative of this.



Figure 3: Financial Literacy Training Pictures

10.0 GRIEVANCE REDRESS

The Grievance Redress Mechanism (GRM) for both social and environmental grievances is shown in photo 4 below. The first point of contact is the PMU and designated site contractor. If the issue cannot be resolved at that level it will then be elevated to the Grievance Redress Committee, which is made up of representatives from the ILG, Ward, Police, Women’s Group, CEPA, NCDC and PPL.

There have been no grievance notices received from the affected communities during this reporting period. In SP1, because the land acquisition has already been completed and all

issues redressed prior to December 2016 there are no issues. No construction works has begun on any of the subprojects as of this date.

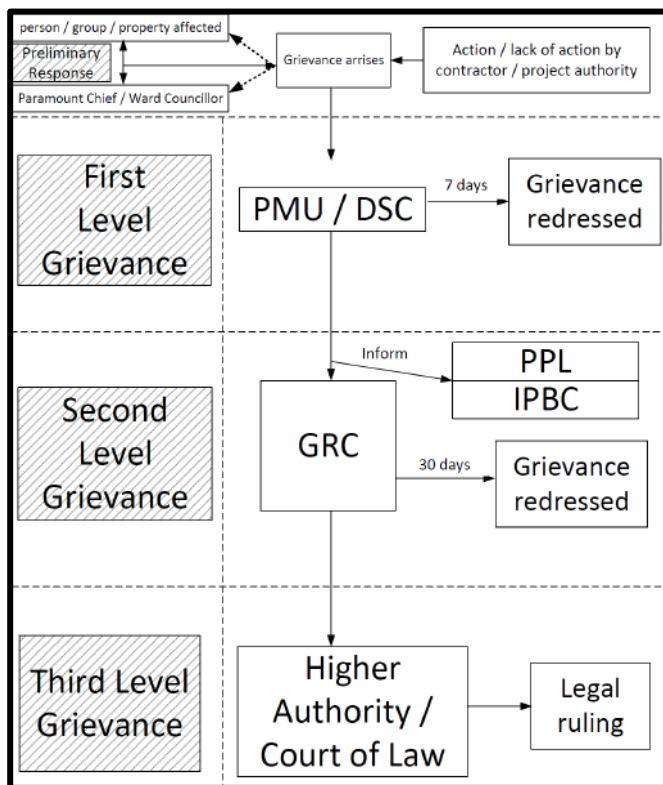


Figure 4: GRM Flow Chart

11.0 CONCLUSION & RECOMMENDATION

- ✓ The PPGDP did not commence construction on any of its subprojects in the first half of 2017 thus no impact on the environment.
- ✓ All resettlement activities have been completed hence the safeguards team is focus on training and awareness program as part of information disclosure and participation.
- ✓ It is anticipated however that for the second half of 2017 there will be some to report especially on environment issues, since the award of contract for SP1 Kilakila Substation and Transmission Line was given to Pestech recently.
- ✓ Monitoring of compliance of the EMP/CEMP for SP1, the renewal of the Rouna cascade EP, as well as the drafting and compliance of SP4B EMP should ensure the PMU safeguard team on top of the situation.

12.0 ACTION PLAN

Table 5: Follow-up Action Plan

No.	Items (issues)	Actions to be Undertaken	By Whom	When (Completion date)
1.0	SP1 Review of CEMP by Pestech.	Review	Leilah Naris	01/12/17
2.0	SP4B EMP	Review	Leilah Naris	01/12/17
3.0	SP5 & 6 Complete CEPA site visits, discuss environmental audit and permit amalgamation.	Follow-ups	Leilah Naris	01/12/17

13.0 APPENDICES

Appendix 1 **SP1 Environment Permit**

Appendix 2 **SP4B Financial Literacy Training Schedule**

Appendix 1 SP1 Environment Permit



THE INDEPENDENT STATE OF PAPUA NEW GUINEA
Environment Act 2000

*Act, Section 65 & 66
Reg., Sec. 16(1)*

ENVIRONMENT PERMIT

An Environment Permit is hereby issued under *Section 65 of the Environment Act 2000.*

TO: PNG Power Limited

OF: P.O BOX 1105, BOROKO, National Capital District

- a) To carry out works at Portion 2997C at Kila Kila near the Port Village Road and the powerline easement from Kila Kila to Six Mile via Taurama within Port Moresby, National Capital District ("the premises");
- b) To carry out works under **Level 2 (Sub category 13.2) activity** associated with discharge of waste into water or onto land in such a way that it results in the waste entering water, except where such discharge is ancillary or incidental to, or associated with, any other activity in this Regulation in which case that category of activity will apply to the discharge of waste; and
- c) To discharge waste into the environment from the premises while carrying out a **Level 2 (Sub category 13.2) activity** associated with construction of Kilekila Substation and installation of transmission lines.

The activity shall be carried out in accordance with the terms and conditions specified in this permit.

Permit Number: EP-L2(542)
Date of Issue: 28th January 2017
Date of Commencement: 27th February 2017
Term of Permit: Five (5) years
Date of Expiry: 26th February 2022



Appendix 2 SP4B Financial Literacy Training Schedule



ASSET DEVELOPMENT BUSINESS UNIT

Port Moresby Power Grid Development Project-PMU

Telephone: + 675 324 3254

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 PNG POWER Limited National Office
 Corner Wards Road and Codia St, Hohola
 PO. Box 1105, BOROKO, NCD
 PAPUA NEW GUINEA

FINANCIAL LITERACY TRAINING SCHEDULE

DATE	VILLAGE	NO. OF PARTICIPANTS	TYPE OF TRAINING	PPL OFFICERS	BSP		
					BRANCH	OFFICERS	
22/05/17	KILA KILA	80	Financial Literacy	Leslie Mike	Boroko Banking Centre	Delma Bualten	
						Rolen Segodi	
23/05/17	KEREKADI	30			Joe Kungas	Waigani Drive Branch	Joan Kunda
							Shapine Osembo
24/05/17	GEREKA	50			Tony Boka	Waigani Banking Centre	Gila Ebonosi
							John Gavuli
25/05/17	POREBADA	100	Joseph Akai	Port Moresby Branch	Geno Timo		
					Andrew Mckiwa		
					Naomi Sion		
26/05/17	TAURAMA	50	Micheal Ilam	Waigani Drive Branch	Ageva Manuma		
					John Gavuli		
	TOTAL	310					

*Note a PPL Drive will be attached with the team full-time for the duration of the training. The training coordinator, Leilah Naris will also be on site to supervise when necessary.