



Asian Development Bank

## LOANS 2368/8232 AND GRANTS 0087/0101-SAM: POWER SECTOR EXPANSION PROJECT

### MEMORANDUM OF UNDERSTANDING

#### I. INTRODUCTION

1. A mission<sup>1</sup> (the Mission) from the Asian Development Bank (ADB) visited Samoa from 20-26 May 2012 to conduct a review mission for Loans 2368/8232 and Grants 0087/0101-SAM: Power Sector Expansion Project (Project). A list of persons met is included in Appendix 1. A wrap-up meeting was held on 25 May 2012 at Ministry of Finance (MOF). This Memorandum of Understanding (MOU) records the understandings reached between the Government and ADB.

#### II. MISSION FINDINGS

##### Loans 2368/8232 and Grants 0087/0101-SAM: Power Sector Expansion Project (PSEP)

2. The Project was approved by the Board on 21 November 2007, signed on 11 December 2007, and became effective on 19 June 2008. Loan closing is on 31 December 2016. The Project is being co-financed by Japan International Cooperation Agency (JICA) and the Government of Australia. The cumulative commitments and disbursements as of 10 May 2012 are detailed below:

**Table 1: Cumulative Contract and Awards (10 May 2012)**

Fund Source	Loan/Grant Amount – Current Value (\$ million)	Contract Awards (\$ million)	%	Disbursements (\$ million)	%
2368-SAM (ADB Loan)	26.613	19.700	74%	15.407	58%
8323-SAM (JICA Loan)	56.961	29.601	52%	23.151	41%
0087-SAM (ADB Grant)	15.390	9.220	60%	6.615	43%
0101-SAM (AusAID Grant)	8.000	7.964	100%	6.563	82%
	<b>106.963</b>	<b>66.485</b>	<b>62%</b>	<b>51.736</b>	<b>48%</b>

3. The PMU has advised that several variations amounting to about \$2.76 million are currently in various stages of review and approval. In addition to this, two materials and equipment supplies contracts have recently been approved for (i) Fiaga 33kv Transmission and 22kv Distribution Lines, Upolu 22 kV conductor upgrade, and Puapua Asau 22kV Reconductoring (\$4.14 million), and (ii) SCADA (\$3.46 million). The PMU advised that 9 withdrawal applications amounting to \$0.713 million have recently been submitted to the ADB. Four more applications in the amount of \$1.329 million are with the Ministry of Finance. About

<sup>1</sup> The Mission comprised (i) Anthony Maxwell, ADB Team Leader, (ii) Paul Hattle, ADB Energy Specialist, (iii) Wen Zhang, ADB Infrastructure Specialist, (iv) Taniela Faletau, ADB Safeguard Specialist, (v) Bhauna Sharan, ADB Project Analyst, (vi) Susan Francisco, ADB Consultant, (vii) Joseph Mayhew, New Zealand Ministry of Foreign Affairs and Trade, (viii) Ralph Karhammar: AusAID Consultant



\$4.619 million in disbursements is expected to be submitted before end of 2012. The following table provides the anticipated commitments and disbursement for the year.

**Table 2: Actual and Predicted Contract Award and Disbursement Projections - 2012**

	Overall 2012 Projections	Contract Awards			Overall 2012 Projections	Disbursement		
		Actuals (31 Mar 2012)	Expected awards to Dec 12	Over/ (Under)		Actuals (31 Mar 2012)	Expected WAs to Dec 12	Over/ (Under)
2368-SAM (ADB Loan)	1.70	0.33	3.21	1.85	3.00	0.71	2.01	-0.27
0087-SAM (ADB Grant)	1.44	0.00	2.28	0.84	3.10	1.72	1.53	0.15
8232-SAM (JICA)	4.20	0.00	4.87	0.67	10.20	3.13	3.05	-4.02
0101-SAM (AusAID)	0.04	0.00	0.00	-0.04	0.70	0.49	0.06	-0.15
	<b>7.38</b>	<b>0.33</b>	<b>10.36<sup>1</sup></b>	<b>3.32</b>	<b>17.00</b>	<b>6.05</b>	<b>6.66</b>	<b>-4.29</b>

1. Includes anticipated \$2.76 million variations.

4. **Loan Buy Down Mechanism.** The Project includes a loan buy down mechanism<sup>2</sup> of AUD\$4 million for conversion of loan to grant, funded by AusAID. A summary of progress towards the performance targets is presented in Table 3. All triggers are anticipated to be met by August 2012, at which time the loan buy down mechanism will be triggered.

**Table 3: Progress on the Loan Buy Down Mechanism Triggers**

Triggers	Progress
1. Appointment of an independent technical and price regulator for the power sector	The Electricity Act was passed in December 2010. TA 4994-SAM: Implementing the Samoa National Reform Energy Policy (grant financed by AusAID) supported drafting of the Electricity Act and Regulations. A multi-sector regulator has been appointed within the Office of the Regulator to manage power regulation. MOF has allocated budget for the Office of the Regulator to manage power regulation in fiscal year 2012/13.
2. Improvement of Electric Power Corporation (EPC) debt collection performance such that accounts receivable shall not have exceeded 2 months of electricity sales for a minimum of two years	Receivables are 45.4 days as of 30 April 2012. Receivables have remained below 2 months since 30 September 2007 (4.5 years). Compliance with this loan buy down trigger has been achieved.
3. Usage of prepaid meters by 75% of all EPC's electricity customers by 31 December 2012	Currently an estimated 71.8% of EPC's customers are using prepaid meters. The installation of prepaid meters is on-going. The 75% target is anticipated to be achieved by August 2012. Installation projections for prepaid meters are included in Appendix 2.

5. **Conversion of Loan to Grant.** The Project Report and Recommendation to the President (RRP) para. 47 and para. 8 (c) of the Subsidiary Financing Agreement<sup>3</sup> allows for up to 7% of Project costs or a ceiling of \$10 million to be converted from loan to grant by MOF to EPC. Section 6.01 (b) of the Financing Agreement<sup>4</sup> requires a conversion mechanism to be established. EPC and MOF have agreed on a proposed mechanism to assess whether projects are 'on time and on budget'. MOF has agreed to finalize the mechanism agreement for approval by the next Project Steering Committee.

<sup>2</sup> Loan Buydown Agreement between the Government of Australia and Asian Development Bank with respect to the Power Sector Expansion Project Loan in the Independent State of Samoa, 19 February 2008

<sup>3</sup> Subsidiary Financing Agreement (Power Sector Expansion Project) between Independent State of Samoa and Electric Power Corporation, 16 June 2008

<sup>4</sup> Financing Agreement between Independent State of Samoa and Asian Development Bank for the Power Sector Expansion Project, 11 December 2007



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Project Formulation Advisor

**Other**

Ms. Maeva Betham-Vaai

ADB/World Bank Group Focal Officer

Mr. Joseph Walter

Energy Efficiency Expert, IIEC

### Prepayment Meter Installation Projections

Year	Month	Projected Customers with PPM	Projected Total Customers	Projected % of customers with PPM installed	Actual customers with PPMs installed	Actual total number of customers	Actual % of customers with PPMs installed
2008	Sep	5,000	29,800	16.8%	4,760	29,800	16.0%
	Dec	6,940	30,000	23.1%	6,248	32,183	19.4%
2009	Mar	8,190	30,150	27.2%	8,276	32,600	25.4%
	Jun	9,440	30,300	31.2%	13,018	33,000	39.4%
	Sep	10,690	30,450	35.1%			
	Dec	12,065	30,600	39.4%	17,323		
2010	Mar	13,300	30,750	43.3%			
	Jun	14,560	30,900	47.1%	18,391		
	Sep	15,815	31,050	50.9%	20,559		
	Dec	19,080	31,200	61.2%	21,339		
2011	Mar	18,330	31,350	58.5%			
	Jun	19,580	31,350	62.5%			
	Sep	20,830	31,650	65.8%			
	Dec	22,080	31,800	69.4%	22,537	31,730	71.0%
2012	Mar	23,330	31,950	73.0%	22,864	31,848	71.8%
	Jun	24,580	32,100	76.6%			
	Sep	25,830	32,250	80.1%			
	Dec	26,230	32,400	81.0%			

Note: Loan buy down mechanism requires 75% of all EPC customers to be using PPMs by 31 Dec. 2012



6. **PMU Staffing.** The revised PMU organizational chart is presented in Appendix 3. The EGIS-International consultant supervision contract has completed. Three international staff were recruited into the PMU in 2011/12 (generation engineer, transmission engineer, and civil engineer). One international engineer has recently resigned. The previous PMU Project Manager (Tologata G.T.L Tile Lei'a Tuimalealiifano) has been appointed EPC General Manager, and one of the international engineers is now acting Project Manager. The PMU is now advertising internationally for the Project Manager position and is considering re-advertising to replace the resigned international engineer.

7. **Office of Anti-corruption and Integrity (OAI) Project Review.** The ADB OAI has recently completed a random review of the PSEP. The Draft Report has been provided to MoF and EPC for comment and then finalization. The Mission discussed the OAI report recommendations with MoF and EPC.

8. **Public Dissemination of Subproject Commissioning.** The project schedule includes a number of subproject commissioning activities in the next year. The PMU advised that the following activities may be suitable for joint media releases by EPC and the project co-financiers:

a) Hospital Feeder Stage 2	Sep/Oct 2012
b) Fiaga Power Plant commissioning	Oct/Nov 2012
c) Fuluasou Substation	Jan/Feb 2013
d) Substation Salelologa	Feb/Mar 2013
e) SCADA commissioning	Mar/Apr 2013

9. **Revised Investment Plan.** Due to favorable foreign exchange fluctuations, the JICA yen based financing has increased in value from \$38 million equivalent at loan signing to \$56.961 million (10 May 2012) which increases the total project value from \$100 million to \$118.963 million (10 May 2012). The PMU presented a revised investment plan incorporating additional proposed subprojects. The revised investment plan is included in Appendix 4.

10. **Safeguard Review.** The Mission undertook an environmental and social safeguard compliance review of the PSEP subprojects. The results are presented in Appendix 5.

11. **ADB Project Management.** ADB advised the Government that the PSEP is proposed be delegated to the South Pacific Subregional Office (SPSO), effective 1 July 2012. ADB will formally notify Government of the proposed delegation arrangement. The new ADB Team Leader will be Wen Zhang, Infrastructure Specialist. The current team leader will continue to provide technical support to the project.

#### **Proposed Renewable Energy Project (2012 PPTA, 2013 Project)**

12. The proposed project is included in the ADB Country Operations Business Plan 2012-2014<sup>5</sup> as a 2012 \$750,000 project preparation technical assistance (PPTA) grant and a 2013 ADF lending project. The Mission met with various sector stakeholders to discuss priorities in development of renewable energy. The following was noted:

- The Ministry of Finance Economic Policy and Planning Department (EPPD) is currently preparing an Energy Sector Plan. The Draft Report is expected by July 2012.

<sup>5</sup> Samoa Country Operations Business Plan 2012-2014, July 2011



- The Government has indicated a preference for development of grid-connected solar and biomass through the private sector by the establishment of independent power producers. Proposals by private developers for grid-connected solar and biomass generation are currently being considered.
- EPC has prepared feasibility studies for 5 small hydropower projects through funding from the Power Sector Expansion Project. An additional pumped storage hydropower scheme is being considered by EPC for the Afulilo hydropower system. Total installed capacity of the preferred 4 sites is about 2.7MW with an estimated construction cost of \$20-25 million.

13. Based on the above and extensive stakeholder consultation, the following components for the 2012 PPTA "Development of the Renewable Energy Project" is proposed for consideration.

**Phase 1: Renewable Energy Implementation Plan.** Phase 1 would assist the ongoing EPPD preparation of the Energy Sector Plan by developing a technically focused implementation plan. This would consist of a technical analysis of alternative renewable energy options to pre-feasibility/feasibility study stage to allow least-cost comparisons (levelized cost of energy) and prioritization of investment options. Indicatively, this would include small hydropower, biomass/biofuels, solar power and wind power.

**Phase 2: Project Preparation of Least-Cost Renewable Energy Investments.** Based on the output from Phase 1, Phase 2 would identify potential investments for inclusion under the Renewable Energy Project<sup>6</sup>. Phase 2 would also assess options for grant blending of concessional lending through bilateral development partners.

14. The Mission held preliminary discussions with the governments of New Zealand and Australia regarding potential interest in grant co-financing of the project. The Mission advised Government that the ADB team leader for development of the project will be Paul Hattle, ADB Energy Specialist.

### III. CONCLUSION

15. The Mission would like to express its appreciation for the cooperation and the hospitality extended by the GoS and EPC. It is understood that the points of agreement and recommendations as reflected in the MOU are subject to the approval of higher authorities in GoS and ADB.

Signed in Apia, Samoa 25 May 2012

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Mr. Iulai Lavea  
Chief Executive Officer  
Ministry of Finance

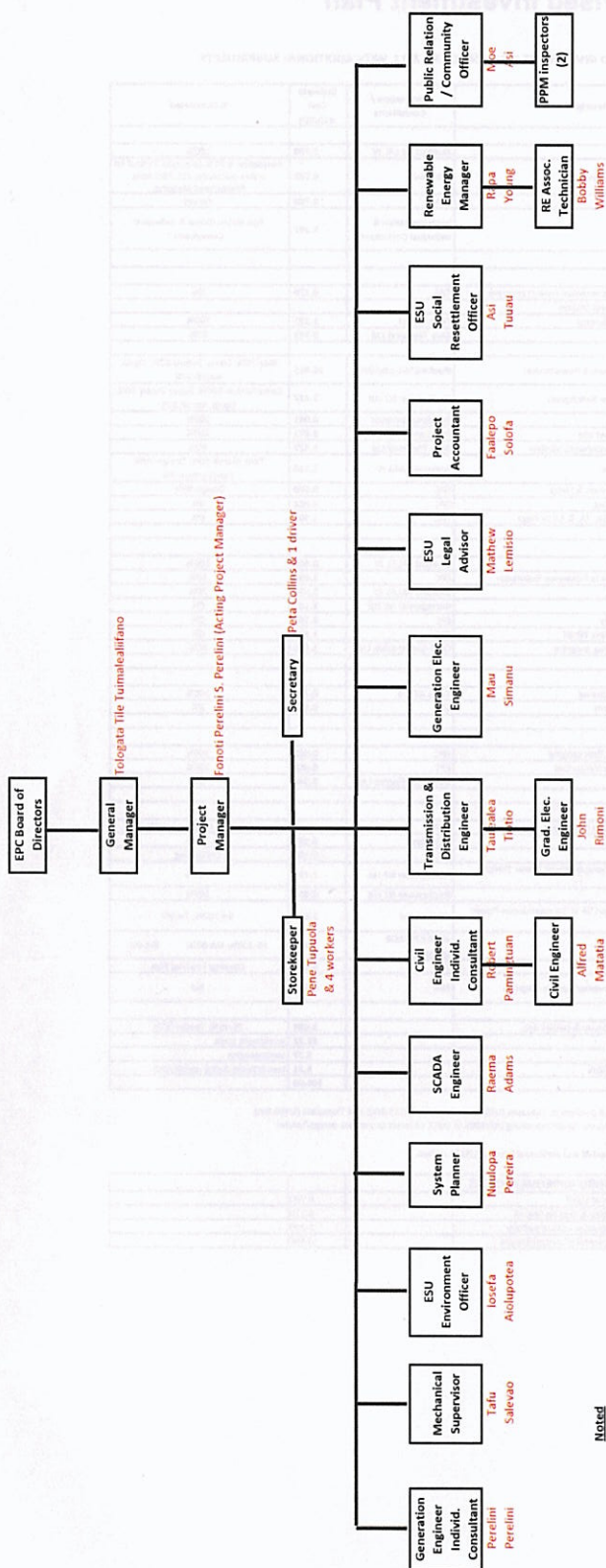
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Mr. Anthony Maxwell  
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<sup>6</sup> Given the Government preference for solar and biomass to be developed by the private sector, it is envisaged that Phase 2 may include development of small hydropower, although options for private sector development of hydropower will also be assessed during Phase 1.



# Revised Project Management Unit Organizational Chart



Noted  
Perelini Perelini and Roberto Panningtuan are 2 consultant engineers

## Revised Investment Plan

POWER SECTOR EXPANSION PROJECT: REVISED INVESTMENT PLAN MARCH 31, 2012, WITH ADDITIONAL SUBPROJECTS

No	Location	Contract Description	Contractors / Consultants	Estimate Cost ml(USD)	% Completed
<b>CORE PROJECTS</b>					
1	Upolu	Hospital Feeder Upgrade Stage 1	Bluebird Ah LAL JV	0.700	100%
2	Upolu/Savaii	Single & three phase Prepayment Metering	A D Riley	6.143	Installation is 91% complete; 71% of All active customers (31,730) have Prepayment Metering
3	Upolu	Project Manager	TBA	0.750	Vacant
4	Upolu	Consultant Services	Implementation & Individual Consultants	3.391	Egis International & Individual Consultants
<b>CANDIDATE SUBPROJECTS</b>					
<b>Upolu Generation</b>					
5	Upolu	T'imanono Power Station noise and emission control program	TBA	0.170	0%
6	Upolu	Refurbishment of Alaoa Hydro Power Station:	Tenix NZ Ltd	1.291	100%
		Electrical - Mechanical	Siwa Transport Ltd	0.503	90%
		Civil Works			
7	Upolu	Fiaga Power Plant	Bluebird/Woods/MHI	28.015	Bldg-70%; Equip. Supply-80%; Equip. Install-100%
		LOT A (Generators & Powerhouse)	Northpower NZ Ltd	3.437	Construction-100%; Equip Supply 90%; Equip. Install 10%
		LOT B (Electrical Switchgear)	Sepulona Surveyor	0.041	100%
		Survey work	PPG Construction	0.071	100%
		Level power plant site	Siwa Transport Ltd	1.426	90%
		1,565,366.25 Access Road/fence/water pipeline	Fuelquip/GMA JV	1.110	Tank manuf-50%; Design-70%; Construction-5%
		1410570.962 Fuel & Oil Tanks	EPC	0.040	Design-70%
		Water pump system & tanks	EPC	0.032	0%
		Water well drilling	TBA	1.500	0%
		Relocate Units 5A, 7A, & 9A to Fiaga			
<b>Upolu Transmission</b>					
8	Upolu	Alaoa Feeder Upgrade 6.6 to 22kV	Bluebird AHLAL JV	0.440	100%
9	Upolu	33kV Transmission Line from Fiaga to Fuluasou Substation	EPC	5.690	10%
10	Upolu	Hospital Feeder Upgrade - Stage 2	Bluebird AHLAL JV	3.753	70%
11	Upolu	Fuluasou Substation	Northpower NZ Ltd	3.103	0%
12	Upolu	Low Voltage System Improvements	EPC	0.162	0%
13	Upolu	22kV UG Fuluasou Substation to Apia Wharf	EPC	1.430	0%
14	Upolu	22kV Overhead conductor upgrading program	GMA Construction Ltd	3.360	40%
<b>Savaii Transmission</b>					
15	Savaii	Phuaia - Asau 22 KV line reconductoring	Tenix NZ Ltd	0.754	100%
16	Savaii	Low Voltage Network Improvements	EPC	0.534	0%
<b>Measurement Equipment</b>					
17	Upolu/Savaii	Measurement equipment: stream flow gauging	EPC	0.062	100%
18	Upolu/Savaii	Measurement equipment: electric HV/current	EPC	0.058	100%
19	Upolu/Savaii	SCADA System	Schneider Electric Ltd	3.548	0%
<b>APPROVED NEW SUBPROJECTS</b>					
20	Savaii	Vaiaata Power Station and Saleitologa Substation	TBA	7.683	FS-95%; Prepare bid-0%
21	Upolu/Savaii	Vending System	A D Riley	0.162	100%
22	Upolu/Savaii	Public dissemination	EPC	0.100	Continuing
23	Upolu	Taeleleaga/Lalomauga/Samasoni/Tanugamanono Power Stations Switchgear Refurbishment	Northpower NZ Ltd	2.731	100%
24	Upolu	Power System Planning Software	Northpower NZ Ltd	0.051	100%
25	Upolu	Refurbishment of Generators 9A and 7A in Tanugamanono Power Station	MAN Diesel	1.678	9A-100%; 7A-0%
26	Upolu	Valpu Pumping Scheme	await EPC/ADB approval	0.477	FS-100%; EIA-80%; Bid-0%
27	ALL	Training	TBA	0.238	Develop Training Plan
28	Upolu	Taeleleaga Power Station Hydro Governor System Upgrade	TBA	0.900	Bid
<b>Hydro Development</b>					
29	Upolu/Savaii	Hydro Developments - Feasibility Study & tender doc.		3.698	FS-95%; Tender 95%
<b>SUBTOTAL</b>				89.22	Investment costs
<b>CONTINGENCY (Physical)</b>				5.57	contingencies
<b>LOAN INTEREST PAYMENT DURING CONSTRUCTION</b>				5.21	loan interest during construction
<b>TOTAL</b>				100.00	

### Notes

- Hydro development needs additional funds to build 3 schemes; Fuluasou (US\$12m); Faleseela (US\$5.8m); and Tiapapata (US\$6.5m).
- Need decision if to go ahead with Vaipu Pump Scheme; assign remaining USD300K in SMEC contract to prepare design/tender.
- TBA - To be announced
- Proposed new subprojects below to utilize unobligated and additional funds of US\$27 million.

No	NEW SUBPROJECTS PENDING GOING THRU APPROVE PROCESS		
30	Upolu/Taeleleaga & Afuilo Dam Hydro - Mitigation of Smell		0.700
31	Fiaga lube oil shipping tanks & engine commissioning & load testing oil		0.120
32	Upolu/Samasoni hydro plant - replace turbine/generator control system		0.300
33	Upolu/Fale ole Fee hydro plant- replace turbine/generator control system		0.400



## Environmental and Social Safeguards Compliance Review

### I. Project Safeguards Classification and Conditions

1. To manage social, land acquisition, resettlement, and environmental impacts under the Project, EPC has established an environment and social unit (ESU) to plan, implement, and coordinate land acquisition, resettlement, and environmental activities. The ESU has established a register to record and monitor temporary and permanent land acquisition, and record consultations and grievances relating to land acquisition and resettlement.

2. A Land Acquisition and Resettlement Framework (LARF) was prepared in accordance with ADB's Involuntary Resettlement Policy (1995) guiding the preparation and procedures for land acquisition and resettlement plans (LARPs). Subprojects with a category A or B rating require a LARP in full consultation with affected people. Compensation and entitlements in this context must be consistent with the entitlement matrix outlined in the LARF.

3. An Environmental Assessment and Review Framework (EARF) was also prepared in accordance with ADB's Environment Policy (2002) and Environmental Assessment Guidelines (2003). The EARF guides the preparation and approval procedures of environmental assessments of subprojects. Initial Environmental Examinations (IEEs) must accompany feasibility studies submitted to ADB with an Environmental Monitoring and Management Plan (EMMP) to accompany subprojects classified as category B or B sensitive.

4. In addition to these standard assurances, the Samoan government and the EPC must also adhere to the following 'specific assurances' in Section VI of the RRP (Assurances and Conditions) pertaining to Land Resettlement and the Environment:

- the Government shall, prior to the commencement of civil works for any project facility: (a) following obtaining the requisite approvals, acquire all land and property for implementing the project; (b) ensure that all land acquisition, compensation, resettlement and rehabilitation activities are specified in the relevant LARP have been completed; (c) ensure that the subproject site is free and clear of all obstructions; and (d) ADB shall have issued its 'no-objection' prior to the award of civil works contract.
- the Government and EPC shall: (a) ensure that any land acquisition, compensation, relocation, resettlement and rehabilitation, as applicable, with respect to the Project is carried out in accordance with the LARP, all applicable laws and regulations in Samoa and ADB's Policy on Involuntary Resettlement (1995). Where discrepancies occur in ADB/AusAid/JICA financed subprojects, ADB's policies shall apply.
- EPC shall ensure that: (a) where there is any significant change in the design of any subproject covered by a LARP or any substantial changes in resettlement impacts, the relevant LARP is updated: (i) updated based on a detailed measurement survey (ii) disclosed to affected persons, and (iii) subsequently provided to ADB for approval prior to commencement of civil works; (b) there are requirements in civil works contractors contracts with EPC to comply with each LARP; and (c) the ESU supervises and monitors closely civil works contractors to ensure compliance with the requirements of each LARP and their respective terms.
- EPC though the ESU shall (a) establish and maintain a register to record and monitor land acquired for the Project on both a temporary and permanent basis; and (b) keep complete records on consultations and grievances relating to land acquisition and resettlement.



- EPC shall (a) design, construct, operate, maintain and monitor the project facilities in accordance with all applicable laws and regulations in Samoa, and ADB's Environment Policy (2002); (b) minimize any adverse environmental impacts arising from the Project by implementing the mitigation measures prescribed in each IEE and PEAR; and (c) ensure that the EMMP prepared for any subproject is incorporated into the design of each subproject implemented, and updated when the detailed engineering design becomes available.
- EPC shall ensure that (a) the civil works contractors comply with all environmental impact mitigation requirements in each EMMP and prepare, on a quarterly basis, mitigation progress and monitoring checklists; and (b) the ESU monitors closely civil works contractors to ensure compliance with the environmental impact mitigation requirements identified in the IEE and EMMP.
- EPC shall ensure that prior to the commencement of civil works for any subproject facility: (a) the PUMA shall have approved the application for development consent for any subproject; and (b) ADB shall have approved the IEE for any subproject.

5. The PMU ESU has to an extent met most of the requirements outlined in the LARF and EARF. The ESU in this context has built the necessary capacity to carry out requirements of the loan covenant and the specific assurances assigned in the RRP. There is however concerns that arise with the following issues addressed in more detail in the following section:

- Adapting project environmental assessment monitoring and design when new variations arise to avoid unnecessary follow on environmental effects.
- ESU vigilant supervision of contractors for environmental assessment compliance.
- Full implementation of mitigation measures prescribed in IEEs and PEAR.
- Updating of relevant LARPs when necessary with full disclosure of project documents to the public.
- Maintenance of a register for grievances and formulation of a redress mechanism which is lacking.

## II. Safeguard Review Findings

6. The terms and conditions for land resettlement as outlined above have been largely met by the PMU. In this context, the technical capacity to address these issues within the PMU ESU has been up scaled to meet project implementation needs with necessary LARPs formulated when triggered after comprehensive consultation with relevant stakeholders. The review identified the following significant land acquisition and resettlement issues in addition to ongoing minor ones identified in Table 1:

### a) 33kV Transmission Line

- 30% of the existing road does not follow the legal road reserve.
- Majority of land is leased or held in freehold with very few held under customary rights.
- Proposal to move either the legal boundary to match the road or vice versa with PMU working with Transport Authority to address road alignment.
- PMU leaning towards proceeding with the project on designated legal boundary while awaiting legal proceedings.

**Note:** This variation triggers the Project LARF with PMU obligated to (a) determine people affected by this variation (b) determine whether a major or minor LARP is required (c) proceed only when the above is met or inaction justified.



b) *Refurbishment of Salelologa Power Station and Construction of New Power Station in Vaiaata.*

- LARP has been submitted for ADB review and approval.
- LARP does not contain a Grievance Redress Mechanism necessary under the ADB Safeguard Policy Statement (2012) for documenting and addressing complaints.

**Note:** The Project was formulated under previous ADB Land Resettlement Policy (1995). ADB has recently consolidated its safeguards into one policy, the ADB Safeguards Policy Statement (SPS) 2010. Vaiaata LARP must therefore take into account this new initiative and adhere accordingly.

7. The terms and conditions for Environmental Assessment as outlined above have been met by the PMU. Again the technical capacity to address environmental issues in the PMU ESU has been up scaled to meet project implementation needs with the necessary IEEs and EMMPs triggered in consultation with relevant stakeholders. The review identified the following significant issues in addition to ongoing minor ones identified in Table 2:

a) *Tanugamanono Plant Noise and Emission Controls*

- Proposed transfer of 3 Power generators to Fiaga Power Plant with 1 to remain and backup the National hospital.
- Proximity to human settlements has led to constant complaints on noise and emissions with calls for compensation.
- Proposal to soundproof remaining generator.

**Note:** PMU ESU has considered the compensation issue over the transition period to Fiaga Power Plant and currently 12 families within the immediate vicinity receive free electricity. The difficulty now is that the rest of the village on the margins is demanding similar compensation. EPCs legal unit is now looking into the matter to determine entitlement for compensation.

b) *Refurbishment of Alaoa Hydro Plant*

- Variation over extra costs associated with disposal of silt from dam as a result of flooding from construction.
- Based on the assumption that the material excavated would be free draining sandy material as found at the base of most rivers, a synthetic membrane to prevent run-off was built.
- Bulk of the material found however was fine silt hence a very high water retention capacity. The material excavated therefore could not be retained as it was free-flowing.
- As the initial prevention measure described above failed. It is a requirement by the sub-project EMMP to conform accordingly; Silva Transport the contractor lodged the change order to construct the containment bund that eventually solved the problem by permanently preventing the flow of silt material to nearby water bodies.

**Note:** ESU to be more comprehensive in project design with environmental aspects comprehensively covered to prevent similar future incidents.

### III. Conclusion

8. For this project because of the scale and multitude of subprojects executed, changes to the scope of civil works and its effects on the environment will always be expected. Any



unexpected variations that arise during implementation thus are susceptible to overlook adapting the initial project design. ESU has shown good capacity to address such issues in a reactive manner but this has been at the expense of the opportunity provided to prevent it in the first place proactively. As a consequence it is recommended that the ESU adhere to the following:

- A more rigorous and comprehensive design process which is more proactive in nature.
- Adapt project environmental assessment monitoring and design when new variations arise to avoid unnecessary follow on environmental effects.
- ESU reinforces supervision of contractors for environmental assessment compliance.
- Full implementation of mitigation measures prescribed in IEEs and PEAR.

9. For Land Resettlement, EPC though the ESU has failed in its obligation to fully (a) establish and maintain a register to record and monitor land acquired for the Project on both a temporary and permanent basis; and (b) keep complete records on consultations and grievances relating to land acquisition and resettlement. The latter is significant in light of changing ADB procedural and approval requirements under the SPS 2010. As a consequence it is recommended that the ESU adhere to the following:

- It is recommended that the ESU take into consideration the ADB SPS in all future work.
- Updating of relevant LARPs when necessary with full disclosure of project documents to the public.
- Maintenance of a register for grievances and formulation of a redress mechanism which is lacking.

**Table 1: Status of Land Acquisition and Resettlement (May 2012)**

Subproject	Land acquisition required	Category	Safeguard Comments
Fiaga Diesel Power Station	Yes	NA	Official transfer of land to EPC outstanding
Fiaga Diesel Power Station to Fuluasou Substation 33kV Underground Cable	No	LARP	30% of road from Fiaga to Fuluasou is outside the designated legal boundary employed by the project.
Hospital Feeder Upgrade Stage 2	No	NA	Underground cable is built inside road reserve with families encroaching on this legal reserve. Issue has been recently resolved.
22kV Fuluasou Substation	Yes	NA	Employs old EPC hydropower station land with Cabinet approving an extra 500sq meters of registered land.
Fuluasou Substation to Apia Wharf area 22kV Underground Cable	No	NA	Underground cable is inside road legal easement.
Supply Installation and Operation of SCADA System	Yes	NA	NCC included in Fuluasou Substation at old Fuulasou. Mini NCC in Salelologa Depot.
Refurbishment of Salelologa Power Station	No	LARP	Old power plant to be replaced with new power station at Vaiaata. LARP pending approval.

Note: Only subprojects with LARP requirements or safeguards comments are incorporated; (NA – Not Applicable, LARP ).

**Table 2: Environmental Compliance Status (May 2012)**

Subproject	Category	Safeguard Comments
Tanugamanono Power Station	IEE/EMMP	Feasibility Study conducted. Noted issue of possible



Noise and Emission Control		compensation for current residents whilst project gets underway.
Fiaga Diesel Power Station	IEE/EMMP	Access road and underground powerlines to save Aoa trees. Unstabilized area behind the main building vulnerable to erosion currently being addressed. Down pipes for storm water requirement for the building also has implications for erosion. Yet to be addressed.
22kV Overhead Conductor Upgrade Program	IEE/EMMP	50% complete with powerline along East Coast Rd requiring easements for affected trees.
Low Voltage Improvement Program	NA	Rapid Environmental Assessment prepared and submitted to ADB for approval. No IEE required.
Supply, Installation and Operation of SCADA System	IEE	Design begun with contract awarded
Refurbishment of Vaiaata Power Plant	IEE	Various issues identified in feasibility study. Under consideration by ADB.
Refurbishment of Taelefaga Hydro Governor System	PEAR	Evaluation Report submitted to ADB for review and approval.

Note: Only ongoing subprojects with EA requirements or safeguards comments are incorporated ; (NA – Not Applicable, PEAR – Preliminary Environmental Assessment Report, IEE – Initial Environment Examination, EMMP – Environmental Management and Monitoring Report).



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