

**Quarterly Progress Report No. 18**

**3rd Quarter 2012**

**(July – Sept. 2012)**

Table of Acronyms

ADB Asian Development Bank

ADR Arthur D Riley

APM Acting Project Manager

ATS Automatic Transfer Switch

AusAID Australian Agency for International Development

CDC Cabinet Development Committee

CEO Chief Executive Officer

CSO Community Service Obligation

DSR Debt-service Ratio

EA Executing Agency

EARF Environmental Assessment and Review Framework

EI Egis International

EPC Electric Power Corporation ESU Environment and Social Unit GoS Government of Samoa

IA Implementing Agency

ICB International Competitive Bidding IEE Initial Environmental Examination IRR Internal Rate of Return

JBIC Japan Bank for International Cooperation JICA Japan International Cooperation Agency km kilometre

kV kilo Volt

kVA kilo Volt-Ampere kW kilo Watt

LARF Land Acquisition and Resettlement Framework LARSF Land Acquisition and Resettlement Screening Form MAN MAN Diesel Australia Ltd

MCIL Ministry of Commerce, Industry and Labour MNRE Ministry of Natural Resource and Environment MOF Ministry of Finance

MOU Memorandum of Understanding

MV Medium Voltage

MWCSD Ministry of Women Community and Social Development

NCB National Competitive Bidding

NPV Net Present Value

PEAR Preliminary Environmental Assessment Report

PM Project Manager

PMC Project Management Committee

PMU Project Management Unit

PPMS Project Performance Monitoring System

PSEP Power Sector Expansion Project

PSC Project Steering Committee

PUMA Planning & Urban Management Agency

REA Rapid Environmental Assessment

SLC Samoa Land Corporation

SMEC Snowy Mountain Engineering Consultant

STEC Samoa Trust Estate Corporation

SWA Samoa Water Authority

TA Technical Assistance

TER Tender Evaluation Report

USD American Currency

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EPC PMU

3rd QUARTER 2012 PROGRESS REPORT

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**1. EXECUTIVE SUMMARY**

This is the Quarterly Progress Report No. 18 and it covers the project activities and progress for the 3rd Quarter 2012 from July 1 to September 30, 2012.

Here is a summary of the progress of each subproject at end of 3rd Quarter, 2012:

**1.1 Core Subprojects**

**Hospital Feeder Upgrade Stage 1 – Contractor was Bluebird Ah LAL JV**

 Project is complete.

**Prepayment Meters (PM) – Contractor is A D Riley NZ Ltd**

 Total number of Prepayment meters installed by ADR up to end of September

2012 is 20,042; 958 left to be completed of ADR‟s contract. Total number of PM in ADR‟s contract is 21,000. Contract includes lowering of meters. Total of 3,988 meters have been lowered to end of September.

 There are 31,909 active meters at end of September 2012; 23,294 are

Prepayment Meters and 8,615 induction or post paid meters.

 73% of total active meters are on Prepayment; this leaves 2% to achieve project goal of having 75% of total number of active meters on Prepayment Meters.

 EPC continued to reconcile and clean-up customers‟ databases in the Daffron and Suprima programs to determine total number of active customers. Post payment customers are still recorded in Daffron, while Suprima program has all prepayment customers.

**Consultancy Services**

 Implementation Consultant, Egis International, is continuing to complete Feasibility Studies of 5 hydro schemes and tender documents of 3 of the 5 schemes.

 EPC hired 3 Individual Consultants (IC) to add to PMU to improve technical capacity of PMU team. The 3rd IC, which is the Transmission and Distribution engineer is replaced by a locally hired TD Engineer.

 PMU submitted to ADB requirements and additional budget for hire of additional consultants needed from time to time on short and long term asssignments. This includes extension of contracts of the 2 IC, shorted term commissioning engineers, Project Manager position, and consultant to conduct Cost of Service and Tariff Study.

**1.2 Candidate Subprojects**

**Upolu Generation**

**1.2.1 Tanugamanono Plant Noise and Emission Controls**

 No activity this Quarter.

**Refurbishment of Alaoa Hydro Plant**

 Project is complete.

 Final change order for civil contractor has been approved and addendum to contract is prepared for signing.

**Fiaga Power Plant Lot A – Contractor is Blue Bird Ah LAL in association with**

**Woods Pacific Ltd and Mitsubishi Heavy Industry (BBA/Woods/MHI)**

 This project includes; powerhouse, 4 new diesel generators, complete with single stack exhaust system, fuel, oil, cooling, waste oil and charged air systems, extern water and fire fighting system, water storage tanks and booster pumps, wastewater system, mechanical and electrical workshop, earthgrid system, fence, and outdoor security lighting.

 Completion date is scheduled for February 2013 with commissioning scheduling

to commence mid January 2013.

 State of completion to date - 90% of powerhouse, 80% of installation of the 4 generators and associated equipment, 60% of the civil work, 60% of external

water system and have not started construction of earth system of the power plant

 4 Change orders have been approved and processed bringing total additional cost to 4.73% of original contract amount. There are still about 7 other change orders received hat are under review. This includes; earthgrid upgrade, lining of exhaust stack, stormwater drainage, structural steel and foundation of building, extra installation cost, retaining wall of unstable bank south of powerhouse, and others.

**Fiaga Power Plant Electrical Lot B – Contractor is Northpower NZ Ltd (NPL)**

 Installation and pre-commission tests of all electrical switchgear is complete.

 Only work left is terminating and connecting cables from generators to electrical switchgear after cables are installed by Bluebird and commissioning of plant when generators are installed.

 Contractor submitted a claim for extra cost incurred: (i) due to delay in accessing

powerhouse to install equipment under their contract which resulted in additional storage and insurance cost for electrical equipment which were received early, (ii) miscommunications between NPL and BBA which resulted in NPL not accessing power plant during Easter Holidays. Extra cost is associated with expenses for Schneider factory engineer here to install switchgear. Claim was disapproved for reasons presented to NPL.

 Northpower had indicated filing for extra cost associated with extension of

insurance coverage for their contract as a result of postponement of commissioning of the generators to February next year. EPC has not received this claim for extra cost.

**Fuel Tanks – Contractor is Fuelquip NZ Ltd/GMA Construction Ltd JV**

 Concrete bund for tanks is complete except for a couple of corrective work to be done. All 6 tanks have been delivered and placed on their mountings. JV started construction of off-loading bay.

 Design of pipework is completed and fabrication started.

 A subcontractor is engaged by contractor to construct remaining civil work.

 Revised completion date with extra work is January 2012.

**Fiaga Access Road/Pipe/Fence – Contractor is Silva Transport Ltd**

 Contract is complete and completion certificate issued.

**Relocation of Generators 5A, 7A, and 9A from Tanugamanono to Fiaga Power**

**Plant**

 Relocation of 3 generators will not start until Fiaga power plant is fully operational in 2nd Quarter of 2013.

 Major work that are completed for installation of the 3 generators that wre constructed and installed under BBA and Northpower Fiaga contracts are: engine foundations, supply and installation of three 6.6/11kv transformers, and 11kv circuit breakers in main high voltage switchgear

 Preparation of tender for relocation of 3 generators started.

 New Board of Director reversed decision by last Board to only relocate 3 generators to relocate all 4 generators to Fiaga.

 Keeping one in Tanugamanono will provide backup power for hospital and other critical government facilities connected to Hospital underground feeder from Tanugamanono.

 Relocating 4th generator can be done, but it will cost quite a bit because power

plant was designed and built to take only 7 generators; 4 new ones and 3 relocated from Tanugamanono power station.

**Hospital Feeder Stage 2 – by Bluebird Ah LAL JV**

 Under underground cables were successfully tested to 22kv when cable was energized after connecting to Tanugamanono 22kv switchgear.. .

 EPC started to change out the eighteen (18) 6.6kv transformers connected to this feeder with same sizes 22kv transformers. One of hospital substation transformers is energized from the Vaitele Feeder until Automatic Transfer Switch is fully commissioned and connection to underground Hospital Feeder is made.

 Improvements included in this subproject are:

a) Upgrade voltage Hospital Feeder from 6.6kV to 22kV;

b) replace eighteen (18) 6.6kV transformers with 22kV transformers;

c) replace the main 500 kVA transformer which supply the National

Hospital

d) Install two padmount Automatic Transfer Switches (ATS) at the National Hospital‟s two electricity supply points. ATSs enable two distribution feeders to be connected to the hospital substations so

that if the primary feeder is off, the ATS will automatic switch to 2nd

feeder;

e) Replace the 22kV overhead lines of Hospital Feeder with 22kV

underground cables from Tanugamanono power station to Savalalo;

f) Construct a dedicated underground transmission line to connect the

Samasoni hydro plant direct to Tanugamanono power station; and

g) Connect dedicated transmission line for Alaoa and Fale ole Fee hydro plants direct to 22kv switchgear in Tanugamanono power station instead of feeding through East Coast distribution feeder.

**33kV Transmission Line – Construction by EPC**

 This 33kV transmission line connects the new Fiaga power plant to the new Fuluasou Substation and continues to Tanugamanono power station. This line becomes the 33kV backbone transmission line that links power stations to substation. There are two 33kV circuits connecting Fiaga Power Plant to Fuluasou Substation; one underground and one overhead. Reason is to improve reliability of transmission line during major cyclone or eathquake. Line continued underground from Fuluasou Substation to Tanugamanono power station.

 Construction of 33kv overhead line started. Construction is done by EPC and

supervised by Distribution Engineer. Pre-stressed concrete poles are used for the

33kv transmission line. About 40% of poles are installed and framed.

 The second 33kv transmission line from Fiaga to Fuluasou is built underground.

 Excavation of trench to lay underground 33kv cable and fiber optic cables from Fiaga power station to Fuluasou substation will be contracted out but EPC installing the cables. Total length of trench is15 kilometers.

 Bid for construction closed on 17 of September. Construction is split into 2 lots.

Evaluation report has been submitted to ADB for approval.

 Most of materials for the 33kv lines and other feeders have arrived. 22 and 33kv cables are scheduled to arrive in October.

 Consultations with affected people and survey of powerline route are finished.

Crop damage compensations are being processed.

 There are still issues between EPC, Land Transport Authority and Samoa Land Corporation related to the route of the new transmission powerline, existing road and true legal reserve of the road. This is attributed to fact that 30% of existing road does not follow legal reserve of road. New poles following the true legal reserve are too close to existing paved road. In other cases powerline is too close to houses of some people living along side of the road. These issues are being sorted out on a case by case.

**22kV Underground Cables from Fuluasou Substation to Apia – by EPC**

 Rest of materials supplied as part of 33kv TL contract. Contract has been awarded to 2 suppliers.

 All conduits and vaults for this underground feeder have been built and installed under another earlier contract .

 Work has not started to install cables and associated equipment. All high voltage power poles along Vaitele Street from Lepea to Malifa will be removed after underground cables, transformers, low voltage network are installed. This will enable LTA to complete installation of street lights on Vaitele Street.

 Section of this underground cable from Fuluasou to Lepea bridge was supposed

to be direct buried. However, 200 meters of this section from Tulaele/Vaitele Roads intersection to Lepea bridge will have cables installed in conduits. This is because construction of extension of 4 lanes from Lepea to Vailoa has started and they are laying conduits for power cable in this section of the new road.

**Fuluasou Substation – by Northpower NZ Ltd**

 Work completed to end of September - 80% of civil work, 80% of the building, and

80% of installation of transformers and switchgear.

 EPC reduced scope and cost of this Contract. Replacing the Lalomauga hydro plant 22/33 kV substation for 33kV tie and interconnecting 33 kV switchgear is taken out of contract. These changes are included in Change Order 1.

 Change Order No 1 is approved and addendum of contract prepared.

 A second change order is bring prepared for changes in civil work. Again, this change order will result in reduction of contract amount.

 Completed factory testing of transformers in Schneider‟s (supplier) factory Indonesia. EPC sent 3 engineers to witnessed tests. Transformers were received and installed.

 This project will be completed and facility handed-over to EPC in November. Left to be done is final commissioning when Fiaga power plant is completed in February next year.

**Low Voltage System Improvements (Upolu)**

 No activity on this subproject this quarter other than receiving rest of materials..

**22kV Overhead line Reconductoring – Contractor is GMA Construction Ltd**

 Construction continued. Work is 80% complete.

 There were land disputes on construction of new 33kv powerilne along main east coast road due to crop damages. PMU surveyed crop damages and processed approval of compensation for affected families. There are 26 affected families involved. Total cost of compensation is $91,550 Samoan Tala.

 Contractor filed a SAT$1,126,076.84 claim loss of revenue due to stoppage of work due to lack of materials. Acting Project Manager disapproved this claim twice. Matter has now gone through Adjudication Process. EPC and Contractor finally agreed on Adjudicator. He is Latu Kupa, a Council Member of the Institution of Professional Engineers of Samoa (IPES).

**Refurbishment of Salelologa Power Station and construction of new power station in Vaiaata.**

 ADB approved resistivity study of site of new power plant in Vaiaata. Northpower

company was selected to do study. Field work of study is completed.

 PMU decided to implement Salelologa Substation separately from Vaiaata Power Plant due to deteriorating conditions of electrical switchgear in Salelologa power plant and long implementation time of the Vaiaata power plant. PMU started to prepare bid for substation. Substation will be housed inside old power plant building. ADB approved bid document for substation. Bid is issued on October 1,

2012.

**Puapua to Asau 22kV (Savaii) overhead line upgrade – Contractor is Tenix NZ Ltd**

 Outstanding to be done is reconductoring of remaining 102 spans of HV powerline

Materials are received. Work will be done by EPC.

 Now planning to have Savaii crew do it. We will combine construction of this with rebuilding of Low Voltage Network, which is one of outstanding subprojects.

**Stream Flow Gaging & Test Equipment**

 Project is 100% complete.

 Stream gauging station in Tiavea is shutdown and equipment removed. Adequate data has been collected.

**Refurbishment of Generators 7A and 9A in Tanugamanono Power Station –**

**Contractor is MAN Diesel Australia Ltd**

 Contract is complete with recent commissioning of generator 7A. A new

crankshaft was installed in 7A as well as major overhaul. Unit 7A replaced Unit 5A

in original contract to overhaul generators 9A and 7A.

 PMU and Attorney General Office are finalizing addendum to this contract for the many changes.

 Contract was originally to refurbish Units 9A and 5A. Unit 7A later replaced 5A

due to sudden failure of 7A crankshaft. Additional parts were also purchased.

**SCADA – Schneider Electric Ltd**

 Contract is awarded to Schneider Electric Ltd. Contract agreement is signed.

 Design work starts.

 Schneider engineers visited on April 10 - 13 to start data collection and finalize contract agreement.

 Signing of contract is delayed due to a few legal and technical issues. PMU / Office of Attorney General continued to work on contract.

**Vending System for Prepayment Meters**

 EPC and National Bank of Samoa launched a new system this year for customers to buy top up tokens by a texting system to NBS and payment of token is

deducted direct from customer account in NBS. Cost of each transaction is 1 Tala, and is paid by customer. Money collected is automatically deposited in EPC account with NBS. Already 1000 new customers have signed up with NBS for this new service.

 A new prepayment meter from another supplier is being tested if can work in

existing vending system. If it works, this will give EPC an option of another supplier.

**Taelefaga, Lalomauga, and Samasoni Hydro Plants and Tanugamanono Power**

**Station 22kv Switchgear Refurbishment**

 Contract is 100% complete. Plants are back in operation.

**Hydro Development**

 Hydro development of schemes in Savaii and Upolu are combined under this subproject.

 Implementation Consultant (Egis International) continued with preparation of Feasibility Studies of 5 hydro schemes; which are: Falese‟ela, Fuluasou, Tiapapata, and Tafitoala on Upolu and Faleata-Palauli on Savaii. They are also preparing design built tenders of 3 schemes (Fuluasou, Faleseela, and Tiapapata).

 Summary of capital costs and annual electricity generated from each of the 3 selected schemes. There isn‟t enough funding in the present budget to build all 3

schemes. Additional funding is needed.

|  |  |  |  |
| --- | --- | --- | --- |
| Hydro Schemes | Installed Capacity  MW | Annual Generation  kWh million | Capital Costs  US$million. |
| Fuluasou | 1.15 | 4.061 | $13.057 |
| Tiapapata | 0.6 | 3.478 | $6.177 |
| Falese‟ela | 0.5 | 1.776 | $4.910 |
| Total | 2.25 | 11.315 | $24.144 |

**Vaipu Pump Scheme**

 Decision from ADB and EPC to start implementation of this project is still pending.

 ADB funded study under a Technical Assistance TA: 7121 SAM – ***Afulilo Environmental Enhancement Project*** Phase 1 Report by SMEC is complete. Report has been reviewed and discussed by various Government agencies. EPC is presently planning to conduct consultation with 6 villages of Fagaloa District to present findings of the Study.

 Unpleasant smell of hydrogen sulphide odour generated at Afulilo Dam continues

to be of major concern to the people of the village of Taelefaga where the discharge water from the hydro plant flow through. Kids affected by the smell ended up in hospital from vomiting and headache.

 EPC has decided to implement recommendations of Study Report to mitigate the smell. A new subproject outline to implement these recommendations will be submitted to EPC Board for approval. It is also brought to ADB for their review and approval.

 Plan is to: 1st install concrete pipes in the ocean to pipe the water from hydro plant

to discharge in deep part of bay. 2nd is install pumps or air compressor to improve the circulating of deep water in dam up on surface to expose to oxygen.

 A USD$300,000 is left over from the TA used for SMEC study. ADB is requested to reprogram this money towards the budget for implementation of remedy to the odour problem.

**Taelefaga Hydro Plant Governor System Replacement**

 Revised Evaluation Report was submitted to ADB for final consideration.

 ADB and Government granted approval to award contract to Northpower NZ Ltd for total price of US$914,967.75 or SAT$2,091,354.86.

 Contract replaces existing control system of two hydro generators in the

Taelefaga hydro station.

**Training**

 This is subproject of its own, with a budget of US$0.235million.

 EPC Board approved outline of this subproject; budget is US$0.235 million.

 PMU is preparing Training Plan

 Plan will include setting up a computer based Asset Management Program (AMP) to plan, schedule and manage maintenance of all facilities. PMU reviewed an existing maintenance schedule that was used by EPC if suitable for AMP.

 PMU prepared bid for installation of Asset Management Program, bid has not been issued until evaluation of an existing program is done.

 It also include of EPC linemen, mechanics, SCADA technicians and engineers, and operators and power system controllers.

**PMU Staffing**

 Project Manager‟s position is still vacant. Generation Engineer Consultant continued as acting project manager. EPC advised position locally and internationally. Interview has been done.

 All positions are now filled except for PM.

 PMU to submit proposal for additional consultancy services needed to see PSEP

to completion.

 EPC hired Distribution Engineer for PMU. 30 EPC linemen are also assigned work under PMU for construction of power distribution subprojects. This include: 33kv underground transmission line from Fiaga power station to Fuluasou substation,

33kv overhead transmission line from Fiaga power station to Fuluasou substation,

33kv underground transmission line from Fuluasou substation to Tanugamanono power station, 22kv overhead distribution line from Fiaga power station to

Fuluasou substation, 22kv underground feeder from Fuluasou substation to Apia, connecting Samasoni hydro 22kv transmission line to Tanugamanono power plant, connecting Alaoa/Fale ole Fee hydro transmission line to Tanugamanono power station and other powerline work.

 ADB concurred to conduct EPC cost of service and tariff study and funded under

PSEP loan.

 ADB also concurred to hire short term experts for commissioning of Fiaga power plant, SCADA and Fuluasou Substation.

**Investment Plan Revision**

 Revised Investment Plan is submitted to ADB for approval. Same plan has been approved by Project Steering Committee, and Project Management Committee.

 Project original Plan had 19 subprojects. 11 new subprojects were added under the same budget. No subproject was dropped.

**Financial Report at end October, 2012**

|  |  |  |
| --- | --- | --- |
| **Financial Report to end of end of October 2012** | | |
| **No.** | **Details** | **Amounts in USD** |
| 1 | Total Project Budget | USD$119.272 million |
| 2 | Total Amount Obligated/Committed | USD$76 million |
| 3 | Total Claimed (Withdrawal Application) | US$66 million |
| 4 | Total Amount Already Disbursed  (Loan+Grant) | US$63.08 million |
| 5 | Total Amount Paid Out from: ADB Loan  ADB Grant JICA Loan AusAid  EPC  (US$4.5m include interest payment during construction of SAT$2.8million, Principal repayment has not started until 2013 or 5 yrs from start of project in May 2008) | US$18.4 million US$ 8.7 million US$28.5 million US$ 7.04 million US$ 5.0 million |

6 Original Funding Sources:

ADB Loan ADB Grant JICA Loan AusAid Grant

EPC

US$26.61 million US$15.39 million US$38.00 million US$8.00 million

US$12.00 million

Notes:

1. ADB informed Govt. and EPC during their Mission in May of an increase of US$19.272 million of JICA‟s contribution to Project. This increases project budget to US$119.272 million.

2. EPC will provide a list of subprojects to use this fund on.

3. ADB Mission preferred to keep hydro development subprojects in PSEP under a different development package to seek funding from other sources.

**EPC Funded Projects**

These subprojects which are also managed and implemented by PMU are funded under

EPC‟s local budget:

**Generator No. 5A major overhaul – TBA (pay to EPC)**

 Overhaul was bided out. Evaluation report was approved by EPC Project

Management Committee and Board.

 ADB and Government approved award of contract to MAN Diesel Ltd for price of

AUD$274,114.23 or SAT$682,046.98..

**Overhauls of diesel generators in Salelologa in Savaii**

 EPC did not go ahead with major overhaul. EPC is consideration other options to improve generation in Salelologa before completion of new power station in Vaiaata.

**RENEWABLE ENERGY**

Solar Samoa Ltd

 SSL lost original financier of project. They are now negotiating with a second PV

system manufacturer and engineering consultant with financing packing.

 SSL and new partners brought up some issues related to signed PPA that they request to be changed.

**BIOGen3**

 There has been a long delay due to approval of Environmental Impact

Assessment (EIA).

 Company had plans to import power millet to raise here for feed stock for gas manufacturing. MNRE/PUMA did not approve. Company proposed giant grass instead. Approval is being processed as part of EIA.

 As a starter, Company plans to import glycerine grade liquid fuel to run the generators first awaiting production of gas. Company is seeking land on Apia Wharf to build storage tanks for the imported glycerine. This has not been approved.

 Company said they secured a 10 acre block in Nuu for the plant. We have not received confirmation.

**JICA 400kw Solar Project**

 This project is funded by a US$3.6M grant from Japanese Government to all

Forum Countries.

 Main condition is that the (i) main contractor MUST be a Japanese incorporated company; (ii) all major components of the PV systems must be Japanese made and brand; and (iii) Major components are: solar panels, inverters, and power transformers and switchgear.

 Project involves installation of 400kw or more of total capacity solar systems to

generate electricity and feed into EPC‟s grid.

 Contract is awarded to Sunwise company.

 There is a protest from one of Japanese bidders on contract award. Protest is referred to Project Management Unit set up by Forum to handle this project.

 Project is on hold now while protest is being addressed.

**Renewable Energy Systems Interconnection to EPC system**

 Draft Rules/ Regulations for interconnection agreement has been submitted to Power Regulator and Attorney General for their review and comments. Received Regulator comments.

 Same with interconnection agreement also submitted to Regulator and AG.

**Biodiesel**

 NECC approved to ask developer to provide a formal proposal on setting up bio diesel plants in Samoa.

**Expressional of Interest (EOI)**

 National Energy Coordinating Committee (NECC) of Government approved to issue two EOIs for solar system and biodiesel. Proposals for PV system is closed.

14 companies responded. Biodiesel EOI is extended to end of December.

**Withdrawal Applications**

*Table 1* below provides a summary of Withdrawals Application and Disbursements at end of 2nd

Quarter 2012:

**FAALEPO TO PROVIDE** Q2 WA **report**

**2. INTRODUCTION**

This is the Quarterly Progress Report No. 17 and it covers the project activities and progress for the period from beginning of April to end of June 2012 (2nd Quarter 2012 Progress Report).

This Report provides progress report of each subproject highlighting work completed to date, problems encountered and planned solutions. It also provides financial situation of Project, of total funds obligated, claims received, withdrawal application processed and submitted to

ADB and amount of money paid to contractors. It also gives status of spending

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**3. PROJECT IMPLEMENTATION**

**3.1 Project Management Unit Staff Movement**

PMU has a total of 22 staff; 20 EPC local staff and 2 ADB recruited Individual Consultant engineers (Civil and Generation Engineers).

Total staff includes: 1 Project Manager (vacant since July 2011), 3 Engineers, 4 Graduate Engineers, 1 Mechanical Supervisor, 1 Project Accountant, 1 Attorney, 1 Social and Land Resettlement Staff, 1 Environmentalist, 1 Public Relation Staff, 1 Secretary, a driver, 1 linemen assistant, 1 Store-person and 4 store assisting staff, and 2 Renewable Energy staff. RE section is now incorporated as part of PMU. A JICA engineer was with PMU for 3 months assisting with SCADA project. .

EPC hired a local Distribution Electrical Engineer to replace the International TD engineer who resigned after 4 months of work here. 30 EPC linemen were also assigned to work with PMU for construction 33kv transmission line from Fiaga power station to Fuluasou Substation and to Tanugamanono power station. They also completed other power distribution subprojects under Power Sector Expansion Project.

The Project Manager position is still vacant. Newly hired Generation Engineer has been acting Project Engineer since beginning of this year. It is critically important the appointment should be made as soon as possible.

PMU 21 staff:

Individual Consultant (Generation Engineer) /Acting Project Manager

Generation Electrical Engineer

TD Electrical Engineer

Telecommunication Engineer System Planner Graduate Engineer SCADA/Graduate Engineer

Individual Consultant (Civil Engineer) Electrical Graduate Engineer

Civil Graduate Engineer

1 Environmentalist

1 Land Resettlement Specialist,

1 Legal Advisor

1 Public Relation Coordinator

1 Project Accountant

1 Secretary

1 Administrative Assistant / Store Keeper

3 Store assistants

1 Lineman

1 Driver

30 linemen were assigned to work PMU on construction of powerlines subprojects. Pre Inspection section of 3 people were also transferred to

PMU. They all report to Transmission and Distribution Engineer. Budget for these 33 positions are still covered by EPC.

Construction continued with ten (10) subprojects in this quarter. The status of construction of each subproject at end of 3rd Quarter 2012:

1. Upgrading of the Hospital Feeder to 22kv and undergrounding medium voltage cable from Tanugamanono power plant to Apia –

80% complete.

2. Reconductoring of all 22kv overhead line feeders in Upolu – 90% complete.

3. Civil work of refurbishment of Alaoa hydro plant – 90% complete; work that can be done.

4. Fiaga power plant fuel and oil storage tanks and off loading facility – 60% complete

5. Construction of Samasoni hydro plant dedicated transmission line to Tanugamanono power station is in progress – 80% complete.

6. Fiaga New Power Plant and Generators Lot A – construction of power house is 90% completed, installation of generators 60%

complete, civil work (road, drainage, fence, etc) 60% complete, water tanks, collection, and water distribution system 60% complete.

7. Fiaga Power Plant MV Electrical Switchgear Lot B – switchgear installation and pre-commissioning testing is 95% complete.

8. Construction of 33kv overhead overhead and underground transmission lines from Fiaga power plant to Fuluasou. Construction of overhead line started, 30% is complete. Underground 33kv line has not started.

9. 22kv underground cable from Fuluasou to Apia wharf – 100% of installation of electrical conduits is complete. This was done as part

of the 4 lane road corridor project with Ott Transport as main contractor. Resume of construct has not started.

10. Prepayment meters – 95.73% of meters under A D Riley‟s contract have been installed. Defective meters with blank screens continued to rise. Defective meters with blank screens is biggest concern on this project. Worse, is customers with blank screen meters continue to receive electricity without paying top up. Contractor has been working on a solution for blank screen meters.

**3.2 PMU Actual Personnel Movement during 3rd Quarter and Plan for 4th Quarter**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **3rd QUARTER 2012 ACTUAL** | | | **4th QUARTER 2012 PLAN** | | |  | |
| **NAME** | **DESIGNATION** | | **START** | **FINISH** | | **START** | **FINISH** | | **COMMENTS** |
| **Fonoti Perelini** | Acting Project Manager  & Individual Consultant | | 1 Jul. 2012 | 30 Sept 2012 | | 1 Oct 2012 | 31 Dec 2012 | | Will be available for whole 4th  quarter |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Generation Engineer |  |  |  |  |  |
| **Tupai Mau Simanu** | Generation Electrical  Engineer | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Nuulopa Pereira** | Graduate Engineer - Power System Planner | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Faalepo Solofa** | Project Accountant | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Mathew Lemisio** | Legal Environment  Advisor | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Seukeva Asi Tuuau** | Land Acquisition DFC Specialist | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Moetuasivi Asiono** | PRCS | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Raema S. Adam** | Graduate Engineer –  SCADA | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Roberto**  **Pamingtuan** | Individual Consultant  Civil Engineer | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Posi Moe** | Linesman | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Elisapeta Collins** | Secretary | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Alfred Matatia** | Graduate Civil Engineer | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Venisini Iese** | Storeman | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Transferred to Corporate |
| **Talatau Collins** | Storeman assistant | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Iosefa Leota** | Storeman assistant | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |
| **Puleia Tuiloma** | Storeman assistant | 1 Jul 2012 | 30 Sept 2012 | 1 Oct 2012 | 31 Dec 2012 | Will be available for whole 4th  quarter |

**3.3 Implementation Consultants Personnel Movement**

The Implementing Consultant (Egis International) remaining task under their contract is completion of feasibility studies of 5 hydro schemes and tender documents of 3 schemes. Only 3 experts are involved in this remaining task. Completing this task is late.

There was little progress during this quarter in completing FS and tenders. Project Manager is putting pressure on IC to complete the FS and tenders.

Table below provides number of days worked in each month and combined for 2nd Quarter 2012 for each of IC personnel and remaining man months.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Team Members | Contract  person-mnths  Q4 2011 | Person-mnth  worked in Q2  2012 | Remaining  man- months |
|  | Hydro Expert | 0.526 | 0 | 0.481 |
|  | Civil Engineer | 0.89 | 0 | 0.604 |
|  | Environmentalist | (0.37) | 0 | 0 |
|  | Social and Land Resettlement | (0.1) | 0.37 | 0 |

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**3.5 - Egis International Personnel Movement during this Quarter and Plan for next Quarter**

**3rd QUARTER 2012 ACTUAL PLAN for 3rd QUARTER 2012**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **NAME** | **DESIGNATION** | **START** | **FINISH** | **START** | **FINISH** | **COMMENTS** |
|  | Hydro Expert &  Coordinator | 1 July 2012 | 30 Sept 012 | 1 Oct 2012 | 31 Dec 2012 | Dominique resigned. Egis assigned  another engineer to take over managing of project to completion of remaining tasks. |
| **Peri**  **Perelini** | National Civil Engineer | 1 July 2012 | 30 Sept 012 | 1 Oct 2012 | 31 Dec 2012 | Continued working to complete tenders of 3 schemes. |
| **Sam**  **Sesega** | National  Environmentalist | 1 July 2012 | 30 Sept 012 | 1 Oct 2012 | 31 Dec 2012 | Continued working to complete feasibility studies of 5 hydro schemes. |
| **Sam**  **Sesega** | National Resettlement  Specialist | 1 July 2012 | 30 Sept 012 | 1 Oct 2012 | 31 Dec 2012 | Continued working to complete feasibility studies of 5 hydro schemes. |

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**3.6 Implementation Progress**

All implementation activities or tasks are reflected in measuring implementation progress against the subprojects implementation schedules and referred to as “project progress”. All pre-implementation activities or tasks are considered in calculating subproject implementation progress. These activities or tasks include preparation of the Subproject Outline, Feasibility Study, Rapid Environmental Assessment, Initial Environmental Examination, Screening for Land Acquisition and Resettlement, Tender documents, Evaluation of tenders and preparation of awards and contracts. Each task in the implementation schedule is weighted according to its overall contribution (using time as a reference) to progress of subproject implementation. These weights are used to calculate the percentage of subproject progress along the entire time span of the project. This is to provide a holistic view of the pace on implementation. Due to the magnitude of the Power Sector Expansion Project and the number of its subprojects, it is not practical to list all the tasks or activities. Therefore only milestones are listed for the purpose of simplicity of subprojects progress but more details can be obtained from the Project Schedule Gantt Chart of each respective subproject. Refer to Appendix 2 for Project Monitoring.

**A. Core Subprojects:**

**1. Hospital Feeder Upgrading Project Stage 1**

Project is complete.

**2. Single and Three-Phase Prepayment Metering (PPM)**

A total of 426 prepayment meters were installed during 3nd Quarter; all are conversions from induction to prepayment meters. This brought the total number of meters installed under this contract at end of the 3nd Quarter 2012 is 20,042 or 95.44% of 21,000 meters to be converted under this Contract in AD Riley Contract.

Total number of active meters at end of 3rd Quarter is 31,909; made up of 23,294 prepayment meters and 8,615 induction meters. This brings total percentage of customers with prepayment meters to 73% or 2% short of target of 75%. Remaining meters to be installed by A D Riley will bring total percentage to 75%. All new installations are installed with prepayment meters.

Besides converting to PPMs, contractor also lowered the meters; 36 meters were lowered to

1.6 meters this 3rd Quarter bringing the total number of meters lowered to 4,012. Most CRITICAL issue with this Contract of installing Prepayment meters is:

 Blank screen defective meters is still unresolved. A D Riley have been replacing defective meters under warranty. But main concern is that customers with blank screen meters continues to receive power with topping up their meter with more credit resulting in loss of revenue. ADR have not found a solution on this defect. EPC has written strong letters to ADR related to issue. EPC will eventually claim from ADR its loss of revenue due to blank screen meters.

A D Riley had two technicians here in May to carry out repairs to 786 contract meters and 278 meters installed by EPC. These meters had blank screens. An electronic component was

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replaced in all these defective meters. Hovvever, the repair didn't eliminate defect which caused blank screens.

At end of this 3rd Quarter 2012, a total of 20,042 meters have installed by ADR under their contract, leaving 958 meters remained to be installed to complete their contract.

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Table below shows meters installed during the 2nd and 3rd Quarters 2012:

Breakdown below are meter lowered during 2nd Quarter of 2012 and 3rd Quarter of 2012:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Subcontractors** | **Total**  **installed since start** | **Meters**  **installed in Apr.**  **2012** | **Meters**  **installed in May.**  **2012** | **Meters**  **installed in Jun.**  **2012** | **Meters**  **installed in Jul.**  **2012** | **Meters**  **installed in Aug**  **2012** | **Meters**  **installed in Sept**  **2012** |
| 1 | All Electrical | 5,201 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | McLean Electrical | 9,704 | 51 | 106 | 69 | 207 | 155 | 64 |
| 3 | Telecom. Tronics  Ltd. | 5,243 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total meters installed  each month | | 20,148 | 51 | 106 | 69 | 207 | 155 | 64 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Categories** | **Cable length** | **Q2 – 2012**  **Quantity** | **Q3 – 2012**  **Quantity** |
| 1 | 0-5 meters | 68 | 109 |
| 2 | 5-10 meters | 14 | 22 |
| 3 |  10 meters | 6 | 5 |
| 4 | no cable needed | 0 | 0 |
|  | Lowered during maintenance | 0 | 0 |
|  | Total meters lowered | 88 | 136 |

Included in meter count above are meters that were lowered during maintenance.

Only 4,012 meters have been lowered so far by ADR. This is 20% of total number of meters converted to prepayment plus new ones (or 20,148 at end of 3rd Quarter 2012) installed by A D Riley under its present contract. So there are still about 81% of the meters to be lowered. Beside ADR‟s subcontractor lowering meters as they convert them, EPC is lowering meters already converted on request by consumers. All new meters are installed at 1.6 meters.

**B. Candidate Subprojects:**

**1. Upolu**

**a. Generation**

**(i). Tanugamanono Power Station Noise & Emission Control**

No activity.

**(ii). Refurbishment of Alaoa Hydro Power Station**

Completed.

**(iii). Fiaga Diesel Power Station**

***Powerhouse and Generators (Lot A)***

Plant is schooled to be completed in February 2013. Completion status; building 90%, installation 80%, water and wastewater system 80%, road and drainage 50% and earth system 20%.

***Fiaga power station electrical switchgear (Lot B)***

Northpower NZ Ltd completed 95% of construction and installation of all electrical switchgear, and transformers and testing. Final installation will be done when Bluebird Ah LAL JV completed electrical installation of generators. This includes power cables from generators to11kv switchgear. One change order was approved for upgrade of DC system and supply and installation of SCADA interface equipment.

***Fiaga Access Road, Water Pipeline and Fence***

Project is complete. Certificate of completion has been issued.

***Fiaga Pumped Water Source***

Tender is prepared to pump water from Samoa Water Authority‟s water system to Fiaga power plant. Bid is with ADB for approval. SWA system is 4 km away from the power plant and an elevation climb of about 250 meters. Because of the high elevation of the power plant at 520 meters, it requires 4 booster pumps to pump water to the power plant. Sites of 4 pumps are selected and consultations with Samoa Land Corporation who owns the land and lessees is underway. Bid is scheduled to be issued in October.

**(iv) Refurbishment of 9A and 7A Generators at Tanugamanono Power Plant**

Project is complete and both generators are back in operation. .

**(v) Taelefaga, Samasoni, and Lalomauga hydro plant and Tanugamanono power station new 22kv switchgear**

Project is complete.

**b. Transmission**

**(i). Upgrade of Alaoa 6.6kV Transmission Line to 22kV**

Project is complete.

**(ii). 33 kV Underground Cable from Fiaga Power Station to Fuluasou Substation**

Materials for this project started to arrive. There are two suppliers; INTRACOR and South

Austral. The 33kv transmission line has 2 circuits; underground and overhead. This will

improve reliability of this critical line against cyclones and earthquakes. Construction of overhead line by EPC crew started. Bid to excavate trench, install fiber optic cable conduits and backfill was issued in August and closed in September. Bids are evaluated.

**(iii). Hospital Feeder Upgrading Stage 2**

This project is under construction; 80% of work is completed. Remaining work is energizing of cable and replacement of 18 x 6.6kv transformers with 22kv ones. Same subproject included; Samasoni hydro underground transmission line and connection to Tanugamanono power station of Alaoa/Fale O le Fee transmission line. Conduits and underground feed to main hospital 2nd substation.

**(iv) 22kV Fuluasou Substation**

This project is under construction. Construction by subcontractor, Fletcher Construction continued and is progressing well. Building and civil work (road, drainage, transformer bunds, etc) is 60% complete. Switchgear arrived and is being stored until moved into building. Shipping delayed some of materials for construction.

Change Order No 1 was approved. This reduced contract amount.

**(v). Upolu Low Voltage Network Improvements**

Construction has not commenced. 50% of materials have been received. Remaining 50% is included with rebid materials. Construction will be done by EPC.

**(vi). Fuluasou Substation to Apia Wharf Area 22kV Underground Cable**

Installation of cable and equipment has not started. Cables and materials are arriving. Conduits and vaults for this project from Lepea bridge to Apia is already laid as part of the main Vaitele road. There is a 1.7km section from Fuluasou substation to Lepea bridge that has not been done. Excavation of this 1.7km is included as part of another contract which included the 33kv underground cable.

**(vii). 22kV Overhead Conductor Upgrading Program**

This project is under construction. Contractor, GMA Construction Ltd, continued with construction. About 60% of work is completed and invoiced. This contractor submit a claim of about SAT$1.1M for loss of revenue from September 2011 to February 2012 due to shortage of materials according to them. Acting Project Manager disapproved this claim twice. Dispute is now transferred to Adjudication Process. This is contractor who hired 17 linemen from EPC. Linemen returned to EPC in July 2011. This greatly affected its work production because they did not have qualified linemen and engineer to perform.

**2. Savaii**

**a. Generation**

**(i) Hydropower Scheme**

Savaii hydropower scheme is included under „Hydro Developments‟. One Savaii hydro scheme is included. This is scheme in Faleata, Vailoa, Palauli. Sili Scheme is on hold.

Only activity this quarter is completion of Feasibility Study by Egis International, Implementation Consultant.

**b. Distribution**

**(i). Puapua-Asau 22kV Distribution Line Reconductoring**

Project is complete. No work on this subproject this Quarter.

There are still some sections of distribution system (102 spans of 22kv lines) with conductors that needs replacing with larger ones. Poles and other items will be replaced at same time. Materials are included in rebid materials. EPC will do the work.

**(ii). Power Factor (PF)**

Completed.

**(iii). Low Voltage Network Improvement Program in Savaii**

Materials are ordered and received. Work has not started.

**3. Measurement Equipment:**

**(i). Steam Flow Gauging Equipment**

Completed.

**(ii). HV Testing Equipment**

Completed.

**SCADA**

Assessment and preparation of conceptual designs of network continued. EPC approved to upgrade cable to a 24 core single mode one.

**NEW SUBPROJECTS**

Listed as follows are approved new subprojects:

**(i). Public Dissemination**

On going.

**(ii). Vending System Expansion**

System is in operation.

Only activity is testing of a prepayment meters from Joy Electric Ltd supplier if they work on current vending system. Also getting ITRON manufactured meters to undergo same tests. If successful, this will give EPC other suppliers to buy meters from.

**(iii). Power System Planning Software**

On-going updating of system as changes are completed.

**(iv). Refurbishment of Salelologa Power Station**

New power plant is built in Vaiaata, not Salelologa. Only substation and mini control center is located in Salelologa depot. ADB approved FS and Resettlement Plan. Due to deteriorating conditions of existing electrical switchgear in Salelologa and long delay in completing Vaiaata Power Plant, it was decided to separate bid for Salelologa new substation from Vaiaata Power Plant bid. Tender for Salelologa Substation was prepared and submitted to ADB for final review before issuing bid. Construction of substation will be done separately from Vaiaata power plant. This will improve electrical switchgear of existing power plant in Salelologa.

Resistivity study is carried out in Vaiaata site. Similar geotechnical study will be carried out..

**(v). Refurbishment of Taelefaga and other power plants 22kV Switchgears**

Project is complete.

**(vi). Refurbishment of Tanugamanono Diesel Generators**

Involves Unit 9A and 7A. Refurbishments are completed. Contract is closed out.

**(vii). Vaipu Pumping Scheme**

No decision on this yet if to go ahead.

$300,000 is left over from ADB Technical Assistant used for SMEC study on Afulilo. Request is with ADB to reallocate this fund for implementing of solution to odour problem from water from Afulilo Dam that discharges from Taelefaga hydro plant. There is a separate mitigation subproject to solve smell problem. Tender is prepared.

.

**4. RISKS AND ISSUES**

**A. PMU Organization Structure**

No further action is needed. PMU continued with present organization structure.

**B. Staff Recruitment**

Project Manager‟s position is vacant since middle of 2011; position and is being advertised locally and internationally. A local TD engineer is hired. .

**C. Prepayment Meters**

Major issue is blank screen defective meters that is continuing to increase. Contractor is yet to find a solution eventhough they are replacing defective meters as part of guarantee. But worse problem is customers with blank screen meters continuing to receive power without topping up their meter.

**D. Vending and Card System**

There are no issues. Tests of prepayment meters from other suppliers if working on vending system is on-going. Two new suppliers provide test samples.

**E. Fiaga Power Plant Access Road, Pipeline and Fence**

Only outstanding item was approval of final Change Order No 2, which was finally approved by ADB and Government. Contract Agreement addendum is in process. Project is complete and is being closed out.

**F. Land transfer to EPC**

Official transfer of 97 acres in Fiaga and 100 acres in Vaiaata for new power plants is still outstanding. A third piece of land (5,059 square meters) in Tuana‟imato for the Fuluasou substation was approved by Minister of Environment to be used by EPC. Samoa Land Corporation also approved lease of four 20m x 20m lots on access road to Fiaga power plant to install booster water pumps.

**G. Claims against EPC**

There are two contractual claims against EPC. One is from GMA Construction Ltd with 22kv overhead line reconductoring. Claim is for lost of revenue when work slowed down due to shortage of materials. Total claims is SAT$1,126,076. Acting Project Manager disapproved claim twice. Case is now referred to Adjudication. Our counter arguments are: GMA did not have qualified linemen since 17 EPC linemen returned to EPC; contract is for work completed; amount claimed is excessive; contractor delayed work from beginning as they were finding some qualified linemen and engineer.

Second claim is from Northpower NZ Ltd for extra cost associated with their contract of Fiaga Power Plant Lot B. Extra cost is for additional storage charges due to delay in completion of switchgear room in Lot A contract for construction of powerhouse. Second part of this claim is extra cost for non accessing power plant during public holiday during Easter Weekend.

Again, Acting Project Manager disapproved claims on grounds they supposed to coordinate work with power house contractor.

**5. EPC PERFORMANCE MONITORING**

|  |  |  |
| --- | --- | --- |
| **Design Summary** | **Performance**  **Targets/Indicators** | **Current Status** |
| **Impact**  Access to sustainable and reliable electricity services at affordable prices | Consumer satisfaction  ratings of EPC‟s services  Complaints to EPC‟s  consumer service division | Initial Consumer Confidence Survey (CCS) is scheduled for 2011  EPC reactivated service order tracking system in Daffron System to track all customers requests.. |
| **Outcome**  Improved quality, reliability, and cost- effectiveness of power supply | System Average Interruption Duration Index (SAIDI) Baseline established and verified  on 4th Quarter of 2008 and reduced by 20% by  2015  System Average Interruption Frequency Index (SAIFI) Baseline established and verified on 4th quarter 2008 and reduced by 20% by 2015 | Baseline SAIDI established on 3rd Quarter 2008: Annual SAIDI for Upolu: 1515 min  Annual SAIDI for Savaii: 2622 min Quarterly SAIDI for Upolu: 379 min Quarterly SAIDI for Savaii: 656 min  3rd Quarter 2012 SAIDI:  Total Annual SAIDI for Upolu: 872  Annual Unplanned SAIDI Upolu:480  Annual Planned SAIDI Upolu: 392  Total Annual SAIDI for Savaii: 3432  Annual Unplanned SAIDI Savaii: 3032  Annual Planned SAIDI Savaii: 400  Total Quarterly SAIDI for Upolu: 218  Quarterly Unplanned SAIDI Upolu: 120  Quarterly Planned SAIDI Upolu: 98  Total Quarterly SAIDI for Savaii: 858  Quarterly Unplanned SAIDI Savaii: 758  Quarterly Planned SAIDI Savaii: 100  Baseline SAIFI established on 3rd Quarter 2008  Annual SAIFI for Upolu: 26  Annual SAIFI for Savaii: 44  Quarterly SAIFI for Upolu: 6.5  Quarterly SAIFI for Savaii: 11  SAIFI on 3rd Quarter 2012 |

|  |  |  |
| --- | --- | --- |
| **Design Summary** | **Performance**  **Targets/Indicators** | **Current Status** |
|  | Cost of generation established and published by 1st Quarter of FY 2009 | Annual SAIFI for Upolu: 22  Annual SAIFI for Savaii: 41.04  Quarterly SAIFI for Upolu: 5.5  Quarterly SAIFI for Savaii: 10.26  Refer to Appendix 8 for SAIDI monitoring  Refer to Appendix 9 for SAIFI monitoring  Cost of Generation established and reported to  EPC Board as part of FY 2008 Budget process |
| **Outputs**  1. EPC‟s investment plan meets demand requirements | Power system capacity for energy and power meets demand requirements on Savai‟i and Upolu | Project Implementation Plans meet estimated demand per survey. Planned expansion of power generation is based on N-2 criteria. |
| 2. Operational efficiency  of EPC improves | Baselines for technical  system losses are established and verified by  4th Quarter of 2008 and are to be reduced by 10% by 4th Quarter 2010 and  20% by 4th Quarter 2012  Baseline for non-technical system losses established and verified by 4th quarter  2008 and reduced by 10%  by 2010. | Baselines figures of Total System losses  established on a 12 month moving average at  September 2008 are:  Upolu: 15.7% Savaii: 18.2% EPC : 15.9%  Updated 12 month moving average of total system losses now reported monthly to the Board. End of December 2008 are:  Upolu: 17.1% Savaii: 18.2% EPC : 17.2%  Not possible to calculate Technical losses due to lack of metering and dedicated resources.  Not possible to calculate non-technical losses - this can only be calculated as *“total system loss*  *– technical loss”*  Technical loss is established to be 13.5% from |

|  |  |  |
| --- | --- | --- |
| **Design Summary** | **Performance**  **Targets/Indicators** | **Current Status** |
|  |  | studies by the Japanese Volunteer and PMU in  4th Quarter 2008.  Change in non technical loss can be monitored as technical loss level generally remains static  Finance Department have begun diagnostic review of causes of non-technical loss as basis for implementation of reduction measures |

3. The financial performance of EPC improves

Consistent application of disconnection policy

Fuel audits conducted on all EPC‟s diesel power stations

Timeliness of tariff adjustments in response to cost

EPC‟s collection performance improves such that accounts receivables are below 2 months of sales

Government consumers‟ share of EPC‟s accounts receivables reduced from

55% in 2007 to less than their share of total sales by 31 December 2009

Procedures reviewed in August 2008 and revised procedures implemented. ACCOUNTS AGING.

Fuel Audit‟s at both Upolu and Savaii

Generation Stations introduced 1 May 2008 and now routinely conducted monthly. Results reported monthly to Board.

REPORT Q3 2012 AVERAGE.

Tariff Increase of 10% from 1 September 2008 incorporated in FY 2009 approved Budget not yet implemented – implementation now anticipated as 1st January 2009.

Customers‟ arrears on 3rd Quarter of 2012 were:

Debtor days as = 45.5 days

% Government Debt (of total debt) = 4.27%

% Government Sales (of total sales) = 9.29%

Debt/Sales Ratio: 46.03% Reference Appendix 5

4. Effective regulation of the power sector is established

Electricity Act Reform to govern the power sector was established by 31

December 2009

Amendments of the EPC Act consistent with the Electricity Act by 31

December 2009

Regulatory agency established by 31

December 2010.

Not within Scope of this Project

5. Energy demand-side management

Energy conservation and demand-side management public awareness campaign

implemented

Not within Scope of this Project

6. Development of clean energy

Number of projects by energy subsector financed by the clean energy fund

Number of projects by energy subsector eligible for clean development mechanism

Electricity produced by clean energy resources (baseline of 45

Not within Scope of this Project

**6. COMPLIANCE WITH LOAN COVENANTS (Beneficiary)**

|  |
| --- |
| Covenant  Status Comments |
| The Beneficiary shall carry out the project with due **Complied PMU is carrying out** diligence and efficiency and in conforming with **project with due** sound administrative, financial, engineering, **diligence** environmental and public utilities practices |
| In carrying out of the Project and operation of the **Complied PMU new office at** project facilities the Beneficiary shall perform or **TTTE Bldg is being** cause to be performed, all obligations set forth in **provided with all** schedule 5 of the Financing Agreement **facilities** |
| The Beneficiary shall make available promptly, as **Complied Yes, Beneficiary**  needed, the funds, facilities, services, land and **committed**  other resources which are required in addition to **personnel, funds,**  the proceeds of the ADB Loan and Grant, and the **and other**  JBIC Loan and the Government of Australia Grant, **resources to**  for carrying out of the Project and for the operation **support the project.**  and maintenance of the Project facilities. |
| The Beneficiary shall enable ADB‟s representatives **Complied Yes, ADB Mission**  to inspect the Project, the goods financed out of the **here on Sept 5 to 7.**  proceeds of the ADB Loan and the Grant and the JBIC Loan and the Government of Australia Grant, and any relevant records and documents. |
| The Beneficiary shall take all action which shall be **Complied Yes, EPC provided** necessary on its part to enable EPC to perform it‟s **resources to** obligations under the Project Agreement and shall **support Project.** take or permit any action which would interfere with  the performance of such obligations. |
| The Beneficiary shall exercise its rights under the **Complied Yes, regard claims** Subsidiary Financing Agreement in such a manner **against project and** as to protect the interests of the Beneficiary and **managing of**  ADB and to accomplish the purpose of the Loan **contracts.**  and Grant, and the JBIC Loan and the Government of Australia Grant. |
| No rights or obligations under the Subsidiary **Complied ALL changes to** |

Financing Agreement shall be assigned, amended, or waived without the prior concurrence of ADB.

**contracts are pre approved by ADB including less than**

**15% of contract**

**amount changes.**

**7. LOAN EFFECTIVE MILESTONES (Electric Power Corporation)**

|  |
| --- |
| Details Status |
| Settlement of Government arrears as of 30 September 2007 **Complied** |
| Subsidiary Financing Agreement with EPC **Complied** |
| Establishment of the Project Steering Committee (PSC) **Complied** |
| Establishment of the Project Management Committee (PMC) **Complied** |
| Establishment of Project Management Unit **Complied**  Hire of Implementation Consultant **IC contract expired except completion of 5 hydros**  **feasibility study** |
| Project Manager **Appointment is made**  Restructure of PMU **Maintained old flat org. chart. It works.** |
| Project Accountant **Complied** |
| Generation Engineer **Complied** |
| Transmission & Distribution Engineer **Complied** |

|  |
| --- |
| Power System Planner **Complied** |
| Public Relation & Community Liaison Specialist **Complied** |
| SCADA Engineer **Complied** |
| PMU Secretary **Complied** |
| Establishment of Environment and Social Unit **Complied** |
| Legal / Environment Advisor **Complied** |
| Environment Specialist **Complied** |
| Land & Acquisition Specialist **Complied** |
| Effectiveness of the JBIC Loan Agreement **Complied** |
| Commitment of the Government of Australia Grant **Complied, Aussie Aid grant is used up** |
| Legal Opinion from the Attorney General‟s Office **Complied; all contracts need AGO clearances.** |

**8. RESETTLEMENT (updated quarterly)**

Official transfer or lease of Fiaga 97 acres, Vaiaata 100 acres and additional land in Tuanaimato for Fuluasou Substation is still pending; but not affecting progress of project. These will be addressed towards end of the Project. However, Cabinet had approved all 3 properties for EPC to use for power sector facilities. Samoa Land Corporation also approved lease of four 20m x 20m lots to install booster water pumps for Fiaga power plant water supply.

Status of land acquisition and resettlement for subprojects at end of 3rd Quarter 2012:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subproject** | **Temporary**  **Land**  **Acquisition** | **Permanent**  **Land**  **Acquisition** | **Percentage**  **Obtained**  **%** | **Commentary on**  **Negotiations and**  **Compensation paid** |
| **1) Hospital Feeder**  **Upgrading Stage 1** | N/R | N/R | N/R | N/R |
| **2) Single & Three**  **Phase PPM** | N/R | N/R | N/R | N/R |
| **3) Tanugamanono**  **Power Station Noise**  **& Emission Control** | N/R | N/R | N/R | N/R |
| **4) Refurbishment of**  **Alaoa Hydropower**  **Station** | N/R | N/R | N/R | N/R |
| **5) Fiaga Diesel**  **Power Station** | NO | YES | 100% | Official transfer or lease of  land to EPC is outstanding |
| **6) Upgrade of Alaoa**  **6.6 kV Transmission**  **Line to 22kV** | N/R | N/R | N/R | N/R |
| **7) Fiaga Diesel**  **Power Station to**  **Fuluasou Substation**  **33KV Underground**  **Cable** | N/R | N/R | N/R | Cable route is inside road  reserve but 30% of existing road is outside of legal road reserve. People planted crops inside legal road reserve. Held consultations with affected people and their crops wil be compensated. |
| **8) Hospital Feeder**  **Upgrading Stage 2** | N/R | N/R | N/R | Cable is laid inside road  legal reserve. Have sorted out all land issues. 100% cable is laid. |
| **9) 22kV Fuluasou**  **Substation** | NO | YES | 50% | Use old EPC hydropower  station land. Cabinet approved 500sq meters of extra land for substation. Land is registered. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **10) Low Voltage**  **Network Improvement Program** | N/R | N/R | N/R | N/R |
| **11)Fuluasou**  **Substation to Apia Wharf Area 22kV Underground Cable** | N/R | N/R | N/R | Underground feeder will  terminate at corner of  Vaitele and Falealili Road |
| **12) Fuluasou**  **Substation to Leulumoega via Vaigaga 22kV Underground Cable** | N/R | N/R | N/R | N/R |
| **13) 22kV Overhead**  **Conductor**  **Upgrading Program** | N/R | N/R | N/R | N/R |
| **14) Hydro Schemes** | YES | YES | YES | YES |
| **15) Puapua-Asau**  **Transmission Line**  **22kV Reconductoring** | N/R | N/R | N/R | N/R |
| **16) Power Factor**  **Improvement**  **Program** | N/R | N/R | N/R | N/R |
| **17) Low Voltage**  **Network**  **Improvement**  **18) Fiaga water booster pumps** | N/R  N/R | N/R  YES | N/R  90% | N/R  SLC approved 4 lots for pump sites |

**18)Stream Flow Gauging Equipment**

**19)HV/LV Testing**

**Equipment**

N/R N/R N/R N/R

**20)Supply, Installation & Operation of**

**SCADA System**

NO YES 50% NCC included in Fuluasou Substation at old Fuluasou hydro site. Mini NCC in new

Salelologa Substation

**21)Public**

**Dissemination**

N/R N/R N/R N/R

**22)Vending System**

**Expansion**

**23)Power System**

**Planning Software**

N/R N/R N/R N/R

**24) Refurbishment of Salelologa Power Station**

N/R N/R N/R Old power plant will be replaced with a new power station at Vaiaata. Old plant will be converted to a substation and a Mini Control

Center for Savaii system.

**25) Refurbishment of Taelefaga**

**Switchgears**

N/R N/R N/R N/R

**26)Refurbishment of Samasoni Switchgears**

N/R N/R N/R N/R

**27) Refurbishment of Tanugamanono Generators**

N/R N/R N/R N/R

**28)Vaipu Pumping**

**Scheme**

**30) Refurbishment of Taelefaga hydro**

**governor system**

YES

N/R

YES

N/R

0%

N/R

Yes, would need approval of land for pump and pipeline

N/F

**9. ENVIRONMENT (updated quarterly)**

PUMA approved development consents of all subprojects that are now under construction. PMU is monitoring construction in accordance the DC and reported to PUMA. Inspectors from PUMA also visited construction sites to carry out their own independent inspection of these projects.

ADB approved feasibility study of Vaiaata power plant. Included in FS is Resettlement Plan and

Initial Environmental Examination.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Subproject** | **Constraints** | **Activities** | **Action Taken** | **Comments** |
| **1) Hospital Feeder**  **Upgrading Stage 1** | NIL | NIL | NIL | Completed |
| **2) Single & Three**  **Phase PPM** | NIL | NIL | NIL | 93.4% of meters have  installed. This brings total number of consumers with PP to  71.87%. Target is  75%. |
| **3) Tanugamanono**  **Power Station Noise**  **& Emission Control** | NIL | NIL | NIL | Started Feasibility  Study; not finished. |
| **4) Refurbishment of Alaoa Hydropower Station** | NIL | NIL | NIL | Project is complete. |
| **5) Fiaga Diesel**  **Power Station** | NIL | YES | YES |  |
| **6) Upgrade of Alaoa**  **6.6kV Transmission**  **Line to 22kV** | NIL | NIL | NIL | Completed. Followed  existing line a long side of road. |
| **7) Fiaga New Diesel**  **Power Station to Fuluasou Substation Underground Cable** | NIL | NIL | NIL | Contracts are  awarded for supply of materials. EPC will do construction. 33kv Transmission Line is changed to have one circuit overhead and other underground. |
| **8)Hospital Feeder**  **Upgrading Stage 2** | NIL | NIL | NIL | Construction  continued; 100% of trenching and installation of ducts is complete. Cables |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| being pulled and  installed terminations. | | | | |
| **9) 22kV Fuluasou**  **Substation** | YES | NIL | NIL | Cabinet approved 500  sq meters of land for Substation. Land survey has been registered with MNRE. |
| **10) Low Voltage**  **Improvement**  **Program** | NIL | NIL | NIL | Received all materials  No IEE required |
| **11) Fuluasou**  **Substation to Apia Wharf Area 22kV Underground Cable** | NIL | NIL | NIL | Contracts were  awarded for supply of materials. Vehicles, tools, equipment and other material have arrived. |
| **12) Fuluasou**  **Substation to Leulumoega via Vaigaga 22kV Underground Cable** | NIL | NIL | NIL | NIL |
| **13) 22kV Overhead**  **Conductor**  **Upgrading Program** | NIL | NIL | NIL | Construction  continued. 60% is complete. New powerline along East Coast Road require easements and social resettlement of affected trees. |
| **14) Hydro Scheme** |  |  |  | 5 Feasibility Study  reports are finalized. |
| **15) Puapua-Asau**  **Transmission Line**  **22kV Reconductoring** | NIL | NIL | NIL | Project is complete. |
| **16) Power Factor**  **Improvement**  **Program** | NIL | NIL | NIL | Assessment  completed. PF is good. No further work required. |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **17) Low Voltage**  **Improvement program** | NIL | NIL | NIL | Rapid Environmental  Assessment has been prepared and submitted to ADB.  No IEE required |
| **18) Stream Flow**  **Gauging Equipment** | NIL | NIL | NIL | Completed. |
| **19) HV/LV Testing**  **Equipment** | NIL | NIL | NIL | NIL |
| **20) SCADA System** | NL | NIL | NIL | Contract awarded to  Schneider Electric  (Australia) Ltd |
| **21) Public**  **Dissemination** | NIL | NIL | NIL | NIL |
| **22) Vending System**  **Expansion** | | | | |
| **23) Power System**  **Planning Software** | NIL | NIL | NIL | NIL |
| **24) Refurbishment of**  **Salelologa Power**  **Station** | YES | YES | YES | ADB approved  Feasibility study & Resettlement Plan of Vaiaata power plant |
| **25) Refurbishment of**  **Taelefaga**  **Switchgears** | NIL | NIL | NIL | NIL |
| **26) Refurbishment of**  **Samasoni**  **Switchgears** | NIL | NIL | NIL | NIL |
| **27) Refurbishment of**  **Tanugamanono**  **Generators** | NIL | NIL | NIL | NIL |
| **28) Vaipu Pump**  **Assisted Scheme**  **29) Upolu hydro schemes** | NIL | NIL | NIL | Need to complete IEE  and prepare tender for construction.  Implementation Consultant revising Faleseela Feasibility study and continued |

with rest of FS for other 4 schemes and tender of 3 schemes.

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**10. LOAN DRAW DOWN TO DATE (1 Jan- 31 March 2012)**

10 LOAN DRAW DOWN TO DATE (31December 2010)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No.  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  27  28  29 | TITLE OF SUBPROJECTS |  | | | | | | | |
| *ADB Loan ADB Grant JICA Loan Ausaid Grant EPC* | ADB categ• | Schedule Date  Contract Award | **Revised**  Contract  Budaet | Actual Contract  **Price** | **Contract**  Number | Actual Date  Contract  Awarded | **Draw Down to**  date | **Balance** |
|  |  | USD$M |  |  |  |  |  |
| *26.61* |
| *15.39* |
| *38.00* |
| *8.00* |
| *12.00* |
| *100.00* |
| CORE SUBPROJECTS |  |  |  |  |  |  |  |  |
| Project Manager (0,37 + 0,38 unallocated) | 4 | Q4 2007 | 0.75 | 0.37 | CO N-0108 | 30th Oct 2 007 | 0.06 | 0.69 |
| Pr oject r mplementatr on consultant: EBI(73 man.  m onths) | 4 | Q 1 2008 | 2.67 | 2.67 | CON-05058 | 2 Ma y 2008 | 1.74 | 0.93 |
| Hosprtal Feeder Upgradr ng Project- Stage 1 | 3 | Q 1 2009 | 0.60 |  | SAM·PSEP·02 |  | 1.94 | ·1.34 |
| Smgle.and Thr ee-Phase Prepayment Metenng  Pro·ect | 3 | Q3 2008 | 5.67 | 5.89 | PP M1207 | 30 July 2008 | 4.90 | 0.77 |
| CANDIDATE SUBPROJECTS |  |  |  |  |  |  |  |  |
| UPOLU Generation |  |  |  |  |  |  |  |  |
| T anugamanono Power StatJon Noise and Em1ss1on  Control Proaram | 3 | Q4 2009 | 0.17 |  |  |  | 0.00 | 0.17 |
| Refur brshment of Alaoa Hydropower Statron | 3 | Q3 2009 | 1.34 |  | SAM·PSEP -03 |  | 0.00 | 1.34 |
| Fraga New Dresel Power Station Project | 3 | Q1 2010 | 22.27 | 35.88 | SAM·PSEP -08 |  | 6.10 | 29.78 |
| UPOLU Transmission |  |  |  |  |  |  |  |  |
| Upgrade of the Aal oa 6.6 kV Transmrssr on Line to 22  kV Pro·ect | 3 | Q3 2009 | 1.14 |  | SAM·PSEP -02 |  |  | -0.80 |
| Upolu Diesel Power St ation to Fuluasou Substatron  Underaround Cable Pro·ect | 3 | Q1 2010 | 3.12 |  |  |  |  | 3.12 |
| Hosprt al Feeder Upgradr ng Project- Stage 2 | 3 | Q4 2009 | 3.20 |  | SAM·PSEP -09 |  | 0.84 | 2.36 |
| 22 kV Fuluasou Substatr on Project | 3 | Q2 2010 | 2.93 |  |  |  |  | 2.93 |
| Low- Voltage Network Expansion Program | 3 | Q2 2010 | 1.29 |  |  |  |  | 1.29 |
| Fuluasou Subst ation to Apr a Wharf Area 22 kV  Underaround Cable Pro·ect | 3 | Q2 2012 | 0.00 |  |  |  |  | 0.00 |
| Fuluasou Subst ation to Leulumoega via Vaigaga 22  kV Underaround Cable Proect | 3 | Q2 2012 | 2.78 |  |  |  |  | 2.78 |
| 22 kV Overhead Conductor Upgradrng Program | 3 | Q3 2009 | 6.03 |  | SAM·PSEP -09 |  | 0.41 | 5.62 |
| SAVAII Generation |  |  |  |  |  |  |  |  |
| Hydropower Scheme | 3 | Q3 2012 | 10.65 |  |  |  |  | 10.65 |
| SAVAI'I Transmission |  |  |  |  |  |  |  | 0.00 |
| Puapua-Asau Transmrssron Line 22 kV  Reconductonna Pr oect | 3 | Q3 2009 | 1.24 |  | SAM-PSEP-02 |  |  | 1.24 |
| Low- Voltage Network Expansion Progr am | 3 | Q2 2010 | 0.56 |  |  |  |  | 0.56 |
| Measurement Equipment |  |  |  |  |  |  |  |  |
| Stream Flow Gaugrng Equrpment | 3 | Q3 2008 | 0.05 |  | SAM·PSEP -04 | 23rd Oct 08 | 0.06 | -0.01 |
| Electrical Test Equipment Equr pment | 3 | Q3 2008 | 0.06 |  | SAM·PSEP -05 | 23rd Oct 08 | 0.07 | -0.01 |
| SCADA | 3 | Q4 2009 | 3.48 |  |  |  |  | 3.48 |
| CORE AND CANDIDATE SUBTOTAL |  |  | 70.00 | 44.81 |  |  | 16.12 | 53.88 |
| APPROVED NEW SUBPROJECTS |  |  |  |  |  |  |  |  |
| Vendrng System | 3 | Q 1 2009 | 0.25 |  |  |  | 0.10 | 0.15 |
| Public Dr ssemr natron | 3 | Q 1 2009 | 0.10 |  |  |  |  | 0.10 |
| Power System Plannrng Sof tware | 3 | Q3 2008 | 0.06 |  | SAM·PSEP -06 | 23rd Oct 08 | 0.06 | 0.00 |
| Refurbrshment of Taalefaga and Samasonr SW1tchgea | 3 | Q2 2009 | 1.60 |  | SAM·PSEP -07 |  | 1.97 | -0.37 |
| Refurbrshment of Salelologa Power Statr on | 3 | Q2 2009 | 5.90 |  | SAM-PSEP-10 |  |  | 5.90 |
| Refurbrshment of Tanugamanono Two Generators | 3 | Q3 2009 | 0.75 |  | SAM-PSEP-08 |  | 0.47 | 0.28 |
| Upoul Hydro | 3 | Q ! 20 10 | 3.51 |  |  |  |  | 3.51 |
| Contrngency (Var pu Assrsted Pumprng Scheme) | 3 | Q 1 2010 | 0.50 |  |  |  |  | 0.50 |
| NEW SUBPROJECTS SUBTOTAL |  |  | 12.67 | 0.00 |  |  | 2.60 | 10.07 |
|  |  |  |  |  |  |  |  |  |
| GRAND TOTAL |  |  | 82.67 | 44.81 |  |  | 18.7 | 63.95 |

**LIST OF WITHDRAWAL APPLICATIONS OUTSTANDING AT END OF Q2, 2012**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No** | **WANo** | **Contractor** | **Contract No** | **Lot** | **Claim No** | **Currency** | **Amount** |
| 1 | WA0269 | AD Riley | PPM 1207 |  |  | SAT | $ 46,303.95 |
| 2 | WA0270 | AD Riley | PPM1207 |  |  | USD | $ 4,040.43 |
| 3 | WA0271 | BBA JV MJoods *I* MHI | 12/03A |  |  | USD | $ 351,163.87 |
| 4 | WA0272 | AD Riley | PPM1207 |  |  | SAT | $ 18,661.02 |
| 5 | WA0273 | AD Riley | PPM1207 |  |  | USD | $ 1,579.02 |
| 6 | WA0274 | AD Riley | PPM1207 |  |  | SAT | $ 16,341.92 |
| 7 | WA0275 | AD Riley | PPM1207 |  |  | USD | $ 1,342.16 |
| 8 | WA0276 | Northpower NZ Ltd | 14/01 |  | ClaimS | NZD | $ 435,889.66 |
| 9 | WA0277 | Northpower NZ Ltd | 14/01 |  | Claim9 | NZD | $ 62,676.23 |
| 10 | WA0278 | INTRACOR | 13/02A | LOT 5 | Claim 1 | USD | $ 54,218.64 |
| 11 | WA0279 | INTRACOR | 13/02A | LOT 3 | Claim 1 | USD | $ 99,120.00 |
| 12 | WA0280 | INTRACOR | 13/02A | LOT 5 | Claim2 | USD | $ 42,075.25 |
| 13 | WA0281 | INTRACOR | 13/02A | LOT 1 | Claim2 | USD | $ 5,559.68 |
| 14 | WA0282 | INTRACOR | 13/02A | LOT 1 | Claim 1 | USD | $ 45,778.07 |

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**13. LAST ADB REVIEW MISSION**

No ADB Mission during this Quarter. Next Mission is schedule towards middle of year.

**14. APPENDICES**

**Appendix 1 -INVESTMENT PLAN Revised December 7, 2012**

**POWER SECTOR EXPANSION PROJECT**

**REVISED INVESTMENT PLAN (Revised): DECEMBER 7, 2012, WITH ADDITIONAL SUBPROJECTS**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No** | **Location** | **Contract**  **Description** |  | **Contractors** *I*  **Consultants** | **Estimate**  **Cost mi(USD)** | **Subproject Number** | **%Completed** |
|  | **CORE PROJECTS** | |  |  |  |  |  |
| 1 | Upolu | Hospital Feeder Upgrade Stage 1 | | Bluebird Ah LAL JV | **0.700** | **SAM PSEP 02/01A** | 100% |
| 2 | Upolu/Savaii | Single & three phase Prepayment Metering | | AD Riley | **6.143** | **SAM PSEP 1207** | Installation is 91% complete; 73% of All  active customers (31, 730) have  Prepayment Meters |
| 3 | Upolu | Project Manager | | TBA | **0.750** |  | Position Filled |
| 4 | Upolu | Consultant  Services (Note 1) | | Implementation consultant | **2.67** | **CON 0508** | Egis International & Individual  Consultants, short term consultants, COS and Tariff Study |
|  |  |  | | Individual consultants | **1.50** |  | Individual consultants, short term experts for commissioning, cost of  servce & tariff review |
|  | **CANDIDATE SUBPROJECTS** | | |  |  |  |  |
|  | **Upolu Generation** | |  |  |  |  |  |
| 5 | Upolu | T'manono Power | | TBA | **0.170** |  | 0% |
| 6 | Upolu | Refurbishment of Alaoa Hydro Power Station: | |  |  |  |  |
|  |  | a Electrical- Mechanical | | Tenix NZ Ltd | **1.291** | **SAM PSEP 03** | 100% |
|  |  |  | b Civil Works | Silva Transport Ltd | **0.536** | **SAM PSEP 03/01** | 90%, reduced scope |
| 7 | Upolu | Fiaga Power Plant | |  | | |  |
|  |  |  | a LOT A (Generators & Powerhouse) | Bluebird/Woods/MHI | **29.331** | **SAM PSEP 12/3A** | Bldg-70%; Equip. Supply-80%; Equip.  insta11-70% |
|  |  |  | b LOT B (Electrical Switchgear) | Northpower NZ Ltd | **3.437** | **SAM PSEP 12/38** | 100% complete. CoC issued on  November 19, 2012 |
|  |  |  | c Survey work | Sepulona Surveyor | **0.041** |  | 100% |
|  |  |  | d Level power plant site | PPG Construction | **0.071** | **SAM PSEP 12/28** | 100% |
|  |  |  | e Access Road/fence/water pipeline | Silva Transport Ltd | **1.420** | **SAM PSEP 12/2A** | 100% |
|  |  |  | f Fuel & Oil Tanks | Fuelquip/GMA JV | **1.200** | **SAM PSEP 12/04** | Construction-GO% complete. |
|  |  |  | g Water booster pumping system & tanks | EPC | **0.300** | **SAM PSEP 12/06** | Bid doc-100%;with ADB to review |
|  |  |  | h Water well drilling | EPC | **0.032** |  | 0% |
|  |  |  | i Relocate Units SA, 7A, & 9A to Fiaga | TBA | **3.00** | **SAM PSEP 12/05** | construction 30%, bid preparing |
|  |  |  | j Lube oil supply | TBA | **0.100** | **SAM EPC 19/2012** | Awarded contract |
|  |  |  |  |  |  |  |  |
|  | **Upolu Transmission** | |  |  |  | |  |
| 8 | Upolu | Alaoa Feeder Upgrade 6.6 to 22kV | | Bluebird AhlAL JV | **0.440** | **SAM PSEP 02/02A** | 100% |
| 9 | Upolu | 33kV Transmission Line from Fiaga to Fuluassou Substation | | EPC |  | **SAM PSEP 13/03** | 10% |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | a Materials | INTRACOR $South  Austral | **5.804** |  | 95% materials received |
|  |  |  | b Survey services | Sepulona SS Ltd | **0.007** |  | 100% |
|  |  |  | c Trench excavation contract | TBA | **0.574** | **SAM PSEP 13/02** | biding |
|  |  |  | d Equipment rental | EPC | **0.043** |  | continuing |
|  |  |  | e Land & Social Resettlement compensation |  | **0.087** |  | crop damage compensation |
| 10 | Upolu | Hospital Feeder Upgrade- Stage 2 -Contractor | | Bluebird AhLALJV | **3.753** | **SAM PSEP 09/01A** | construction 100%, installation 70% |
|  |  | (Materials | |  |  |  |  |
| 11 | Upolu | Fuluasou Substation | | Northpower NZ Ltd | **6.265** | **SAM PSEP 12/01** | 100% complete; CoC issued 19 Nov.  2012 |
|  |  | aiRiver bank rip rap protection | | TBA | **0.652** |  | preparing bid |
| 12 | Upolu | Low Voltage System Improvements | | EPC | **0.162** |  | materials supply 100%, construction 0% |
| 13 | Upolu | 22kV UG Fuluasou Substation to Apia Wharf | | EPC | **1.430** | **SAM PSEP 10/01** | construction 30%, installation 0% |
|  |  |  | Materials |  |  |  |  |
|  |  |  | Ott Transport Ltd contract | Ott Transport | **0.066** |  | Extra vaults, pillar boxes and  underground conduits: Statrted |
| 14 | Upolu | 22kV Overhead conductor upgrading program | | GMA Construction Ltd | **3.360** | **SAM PSEP 09/28** | construction 60% |
|  |  | IMaterials | |  | **na** |  |  |
|  | **Savaii Transmission** | |  |  |  |  |  |
| 15 | Savaii | Puapua - Asau 22 kV Iine reconductoring | | Tenix NZ Ltd | **0.754** | **SAM PSEP 02/028** | 100% |
|  |  | IMaterials | |  |  |  |  |
| 16 | Savaii | Low Voltage Network Improvements | | EPC | **0.534** |  | materials supply 100% construciton 9% |
| 17 | Savaii | Reconductor remaining spans (102) | | EPC | **0.096** |  | 0% |
|  | **Measurement Equipme** | | **t** |  |  | **809,646.681** |  |
| 18 | Upolu/Savaii | Measurement equipment: stream flow gauging | | EPC | **0.062** |  | 100% |
| 19 | Upolu/Savaii | Measurement equipment: electric HV/current | | EPC | **0.058** |  | 100% |
| 19 | Upolu/Savaii | SCADA System | | Schneider Electric Ltd | **3.548** | SAM PSEP 12/05 | Design |
|  |  | !contingency, 5% | |  | **0.177** |  | Forecast adding to original scope |
|  | **APPROVED NEW SUBPROJECTS** | | |  |  |  |  |
| 20 | Savaii | Vaiaata Power Station | | TBA | **6.059** |  | Preparing bid |
|  |  |  | a Salelologa Substation | TBA | **2.174** |  | Bid closed, evaluation |
|  |  |  | b Resistivity study | Northpower NZ Ltd | **0.010** |  | Completed |
|  |  |  | c Geotechnical study | TBA | **0.020** |  | Preparing bid |
|  |  |  | d Surveying | Sepulona | **0.003** |  | Completed |
|  |  |  | e Prepare access rd and clear site | TBA | **0.050** |  | 0% |
| 21 | Upolu/Savaii | Vending System |  | AD Riley | **0.162** |  | 100% |
| 22 | Upolu/Savaii | Public dissemination | | EPC | **0.100** |  | Continuing |
| 23 | Upolu | Taelefaga/Lalom auga/Sam asoni/Tanugamanono Power Stations  Switchgear Refurbishment | | Northpower NZ Ltd | **2.731** | **SAM PSEP -07** | 100% |

**n**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Upolu Transmission** | |  |  |  |  |  |
| 8 | Upolu | Alaoa Feeder Upgrade 6.6 to 22kV | | Bluebird AhLAL JV | **0.440** | **SAM PSEP 02/02A** | 100% |
| 9 | Upolu | 33kV Transmission Line from Fiaga to Fuluassou Substation | | EPC | **5.690** | **SAM PSEP 13/03** | 10% |
|  |  |  | a Survey services | Sepulona SS Ltd | **0.007** |  | 100% |
|  |  |  | b Trench excavation contract | TBA | **1.500** | **SAM PSEP 13/02** | biding |
|  |  |  | c Equipment rental | EPC | **0.043** |  | continuing |
| 10 | Upolu | Hospital Feeder Upgrade- Stage 2 | | Bluebird AhLAL JV | **3.753** | **SAM PSEP 09/01A** | construction 100%, installation 70% |
| 11 | Upolu | Fuluasou Substation | | Northpower NZ Ltd | **3.103** | **SAM PSEP 12/01** | construction 70%, installation 5% |
|  |  |  | a River bank riprap protection | TBA | **0.652** |  | preparing bid |
| 12 | Upolu | Low Voltage System Improvements | | EPC | **0.162** |  | materials supply 100%, construction 0% |
| 13 | Upolu | 22kV UG Fuluasou Substation to .Apia Wharf | | EPC | **1.430** | **SAM PSEP 10/01** | construction 30%, installation 0% |
| 14 | Upolu | 22kV Overhead conductor upgrading program | | GMA Construction Ltd | **3.360** | **SAM PSEP 09/28** | construction 60% |
|  |  |  |  |  |  |  |  |
|  | **Savaii Transmission** | |  |  |  |  |  |
| 15 | Savaii | Puapua- Asau 22 kV line reconductoring | | Tenix NZ Ltd | **0.754** | **SAM PSEP 02/028** | 100% |
| 16 | Savaii | Low Voltage Network Improvements | | EPC | **0.534** |  | materials supply 100% construciton 9% |
| 17 | Savaii | Reconductor remaining spans (102) | | EPC | **0.096** |  | 0% |
|  | **Measurement Equipme** | | **t** |  |  |  |  |
| 18 | Upolu/Savaii | Measurement equipment: stream flow gauging | | EPC | **0.062** |  | 100% |
| 19 | Upolu/Savaii | Measurement equipment: electric HV/current | | EPC | **0.058** |  | 100% |
| 19 | Upolu/Savaii | SCADA System | | Schneider Electric Ltd | **3.548** | **SAM PSEP 12/05** | 0% |
|  |  | Contingency, 5% | |  | **0.177** |  |  |
|  | **APPROVED NEW SUBPROJECTS** | | |  |  |  |  |
| 20 | Savaii | Vaiaata Power Station and Salelologa Substation | | TBA | **7.683** |  | Separate bids |
|  |  |  | a Resistivity study | Northpower NZ Ltd | **0.010** |  | start on 15/9/12 |
|  |  |  | b Geotechnical study | TBA | **0.020** |  |  |
|  |  |  | c Surveying | Sepulona | **0.003** |  | start on11/9/12 |
|  |  |  | d Prepare access rd and clear site | TBA | **0.050** |  | 0% |
| 21 | Upolu/Savaii | Vending System |  | AD Riley | **0.162** |  | 100% |
| 22 | Upolu/Savaii | Public dissemination | | EPC | **0.100** |  | Continuing |
| 23 | Upolu | Taelefaga/Lalomauga/SamasonifTanugamanono Power stations  Switchgear Refurbishment | | Northpower NZ Ltd | **2.731** | **SAM PSEP -07** | 100% |
| 24 | Upolu | Power System Planning Software | | Northpower NZ Ltd | **0.051** |  | 100% |
| 25 | Upolu | Refurbishment of Generators 9Aand ?A in Tanugamanono Power  Station | | MAN Diesel | **1.678** | **SAM PSEP -08** | 100% |
| 26 | Upolu | Vaipu Pumping Scheme | | await EPC/ADB  approval | **0.477** |  | FS-100%;EIA-80%; Bid-0% |

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|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 24 | Upolu | Power System Planning Software | | Northpower NZ Ltd | **0.051** |  | 100% |
| 25 | Upolu | Refurbishment of Generators 9Aand ?A in Tanugamanono Power  Station | | MAN Diesel | **1.678** | **SAM PSEP -08** | 100% |
| 26 | Upolu | Vaipu Pumping Scheme | | await EPC/ADB  approval | na |  | Included with other hydro projects |
| 27 | ALL | Training |  | TBA | **0.238** |  | Linemen & other trainings &  computerized maintenance program |
| 28 | Upolu | Taelefaga Power station Hydro Governor System Upgrade | | Northpower NZ Ltd | **0.95** | **SAM PSEP 17/01** | Contract awared |
|  |  |  |  |  |  |  |  |
|  | **SUBTOTAL** |  |  |  | **94.78** |  | investment costs |
|  | **CONTINGENCY (Physical)** | |  |  | **0.01** |  | contingencies |
|  | **LOAN INTERES** | **T PAYMENT DURING CONSTRUCTION** | |  | **5.21** |  | loan interest during construction |
|  | **TOTAL** |  |  |  | **100.00** |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **NEW SUBPROJECTS PENDING APPROVAL BASED ON EXTRA FUND FROM JICA** | |  |  |  |
| 30 | Afulilo Dam Environmental hazard Mitigation |  | 0.750 |  | Design and tender |
| 31 | Refurbish hydro m/c control system of 3 hydro plants (Samasoni, FOF, Lalomauga) |  | 1.800 |  | EPC Board to approve |
| 32 | Refurb. Penstock, valves, etc. of 4 hydras- Taelefaga, Lalomauga, Samasoni & FOF. |  | 2.400 |  | EPC Board to approve |
| 33 | Year make for additonal subprojects |  | 14.322 |  |  |
|  | **TOTAL** I I |  | **19.272** |  |  |
|  | I I |  |  |  |  |

1 Include IC completion of hydro study, independent consultants, short term commission consultants, cost of service and tariff study

2 Total additional funds of US$19.272M is from JICA due to exchange rate gains. This amount can change. ADB/JICA to work out how to fix this amount so that PMU can plan subprojects based on a fix funding source.

3 Proposed new subprojects for additional funds ones ADB/JICA established amount of new funds.

**Appendix 2- DISBURSEMENT PLAN See attachment, Appendix 2**

Appendix 3- Revised Project Schedule to end June 2012

NO .E OF SUBI I status 2C08 2C09 2C 10 2C 11 2C 12 2C 13 2C 14 2015 2016

I 2 3 4 I 2 3 4 I 2 3 4 I 2 3 4 I 2 3 4 I 2 3 4 I 2 3 4 1 2 3 4 1 2 3 4

CORE SUI :Ts

Hospital Feeder Upgrading Project- Stage 1 COM

2 Single- and Three-Phase Prepayment Metering Project liP

3 Project Manager (0,37 + 0,38 unallocated) CONT

4 Project implementation consultant: EBI (73 man-months) CON" ""'I

: !:U!!PRO.J!;CTS

..

"""'

'o4l

UPOLU Generation

5 1 Noise and Emission Control Program FSIP

6 tot Alaoa Hydropower Station COM '4

...

7 Upolu DieselPower Statjon Project (Lot A and Lot B) C(p 1 9

8 Fiaga Access Road, Pipeline,and Fence CIP ""'I

9 Fiaga Fuel and oH tanks CIP

10 Fiaga1

·system CIP ...-

11 Relocate Gen SEts 5A, 7A & 9A to Fiaga Power Plant PL ...

UPOLU

12 Upgrade *ot* the Alaoa6.6 kV · 1 Line to 22 kV Project COMP

"'

13 1 line from Fiaga to Fuluasou Substation CIP

14 33kv Iline from Fuluasou 55 to· CIP

....

15 Hospital! 1 Project- Stage 2 CIP I I I I I I I I I I I I Ia.

•

16 Samasonihydro !trans line to Tanugamanono CIP

22 kV Fuluasou Substation CIP

18 Low-Voltage Network imJ PL

....

19 Fuluasou >Apia Wharf Area22 kV ICable CIP I I I I I I I I I I I ....

...

20 22 kV Ovemead Conductor Upgrading Program CIP

21 Alaoa & FOF hydros, i 1lineto CIP SAVAll

22 OH

SAVAI'ITransmission

23 1 Transmission Line 22 kV 1 Project CIP

24 Low-Voltage Network 1m1 PL Measurement l=nninm..nt

25 Stream Flow Gauging Equipment COMP '4..

...

26 ElectncalTest Equipment COMP ....

...

2: SCADA CIP

NEW SUI :Ts

,,.

"""'

28 V>i»t> • •• Station PL "'Il

29 Salelologa Substation TP

31 Public Dissemination ONG I I

32 Refurbish raaletaga, & otllers 22kv switchgears COMP 'Ill

33 Power System Planning Software COMP I I I

34 tot • Generators 9A and 7A CIP

35 /aipu Pumping Scheme PL

36 Upolu hydro ·Fuluasou, Tipapata, Faleseela,& Tafttoala FSIP

37 Refurbish Taelefaga hydro plant govemor control system CA

38 Afulilo Dam Environmental Hazard Mitigation TP I I I I I I

39 Training PL

40 Refurbish No 12 gen in ['manono &3 gens in Salelologa NEW

== :: s ;:ns :t o :nerator controls ofFOF, Lalomauga &

41

e;:;r; ;d = tocKs, valves, etc ror 1ae1eraga, amasom, Lalomauga,

42

TP

NEW

NOTES & KEY

1 Completion date -actual & planned

2 Original subprojects & implementation schedules from RRP Report

3 New subprojects NOT in original RRP Report

4 Completed

5 Construction in Progress

6 Planning

7 Installation in Progress

8 Feasibiilty Study in Progress

9 On-Going

10 Contract Award

11 On Hold

12 Tender Preparation

13 New, pending approval



COMP CIP

PL INP FSIP ONG AG OH TP NEW

**Appendix 4 - Electricity Receivables**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Schedule 3.1  Government and Private Sector Electricity Arrears | | | | | | | | | | | |
|  | **Month ended** | **Previous Quarters** | | |  |  |  | **Previous**  **Month** | **Current**  **Month** |  | **Variance** |
| **30-Sep**  **2008** | **31-Dec**  **2008** | **31-Mar**  **2009** |  | **31-Mar**  **2009** | **30-Apr**  **2009** | **31-May**  **2009** | **30-Jun**  **2009** |  | **May vs June** |
| **By Consumer Category** | $000 | $000 | $000 |  | $000 | $000 | $000 | $000 | % | $000 |
| **Ministries**  **State-Owned Entities**  **CSO Street Lighting** | 99  353  155 | 227  351  - | 99  223  - |  | 99  223  - | 294  229  - | 208  250  - | 105  134  - | 1.44%  1.83%  0.00% | (103) (116)  - |
| **Total Government**  **Private Sector**  **Debit Note** | **607**  7,567  906 | **578**  7,430  899 | **322**  6,576  824 |  | **322**  6,576  824 | **523**  6,471  799 | **458**  6,500  791 | **239**  6,259  817 | **3.27%**  85.56%  11.17% | **(219)**  (241)  26 |
| **Grand Total** | **9,080** | **8,907** | **7,722** |  | **7,722** | **7,793** | **7,749** | **7,315** | **100.00%** | **(434)** |
| **By Aged Debtor Profile**  **Current**  **1 - 30 days arrears**  **31 - 60 days arrears**  **61 - 90 days arrears over 90 days arrears Debit Note**  **Total** | **$000**  4,566  1,380  487  462  1,279  906  **9,080** | **$000**  4,184  1,563  581  500  1,180  899  **8,907** | **$000**  3,314  1,255  611  454  1,264  824  **7,722** |  | **$000**  3,314  1,255  611  454  1,264  824  **7,722** | **$000**  3,416  1,237  546  502  1,293  799  **7,793** | **$000**  3,365  1,323  510  447  1,313  791  **7,749** | 2,973  1,275  509  420  1,321  817  **7,315** | **%**  40.64%  17.43%  6.96%  5.74%  18.06%  11.17%  **100.00%** | (392) (48) (1) (27)  8  26  **(434)** |
| **ARREARS (excl Current)** | 4,514 4,723 4,408 | | |  | 4,408 4,377 4,384 4,342 | | | | | |
| **12 month total sales** | $74,000 $75,500 $80,000 | | |  | $80,000 $80,000 $80,000 $80,000 | | | |  | |

**KEY PERFORMANCE INDICATORS**

|  |  |  |
| --- | --- | --- |
| **1) Days of Sales 44.8 43.1 35.2 35.2 35.6 35.4 33.4**  **PSEP Performance Target Below 61 days Actual 33.4 days** | | |
| **2) Government Debtors**  **% Government Debt 3.27%**  **% Government Sales 13.46%** | | |
| **PSEP Performance Target** | **Less than 100% Actual 24.28%** | =Debt/Sales |

**Receivables Trend Graph**

100

90

80

70

60

50

40

30

20

10

0

Jul-08

Aug-08

Sep-08

Oct-08

Nov-08

Dec-08

Jan-09

Feb-09

Mar-09

Apr-09

May-09

Jun-09

Current

ADB Covenant

Trend Forecast

**Appendix 5 – Prepayment Meter Installation Projection & Actuals**



|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Jul-08 | Aug-08 | Sep-08 | Oct-08 | Nov-08 | Dec-08 | Jan-09 | Feb-09 | Mar-09 |
| Current | 42.6 | 41.8 | 41.4 | 41.9 | 38.2 | 41.2 | 43.3 | 38.2 | 35.2 |
| ADB Covenant | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 | 61 |

Project Target is to get 75% of consumers on Cash Power Meters at end of project in 2016.

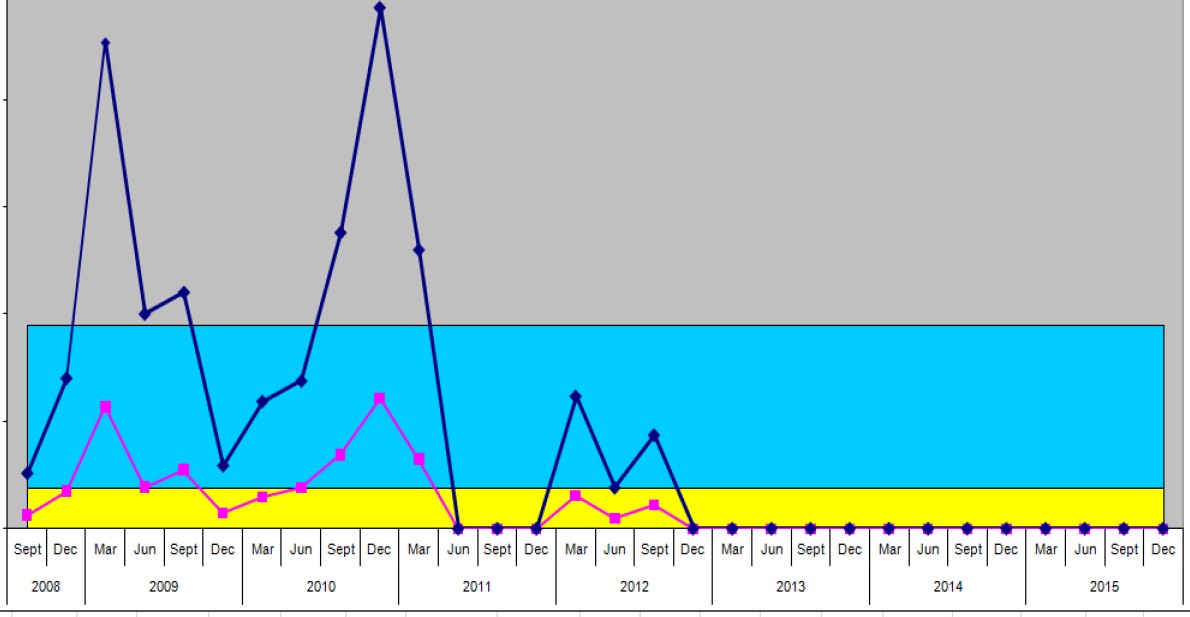
19,616 meters have converted by A D Riley under their contract. At end of 2nd Quarter of 2012,

71.87% of active consumers have been converted or installed with prepayment meters. There is 3.13% needed to meet target. About 1,384 meters are left to be installed under A D Riley‟s contract. 75% will be reached with these meters. EPC is still testing a new meter from another supplier, Joy Electric Ltd. Another supplier is sending test meters to be tested on A D Riley vending system. If successful, this will give EPC new suppliers beside A D Riley. There has not been any technical solution on blank screen defective meters. ADR is asked for a solution. They have gone back to factory of CP meters. No word from them.

See attached list of meters converted

EPC PMU 3rd QUARTER 2012 PROGRESS REPORT Page 62 of 104

Appendix 6- System Average Interruption Duration Index (SAlOl) Monitoring



WOOr-------------------------------------------------------------------------------,

5000

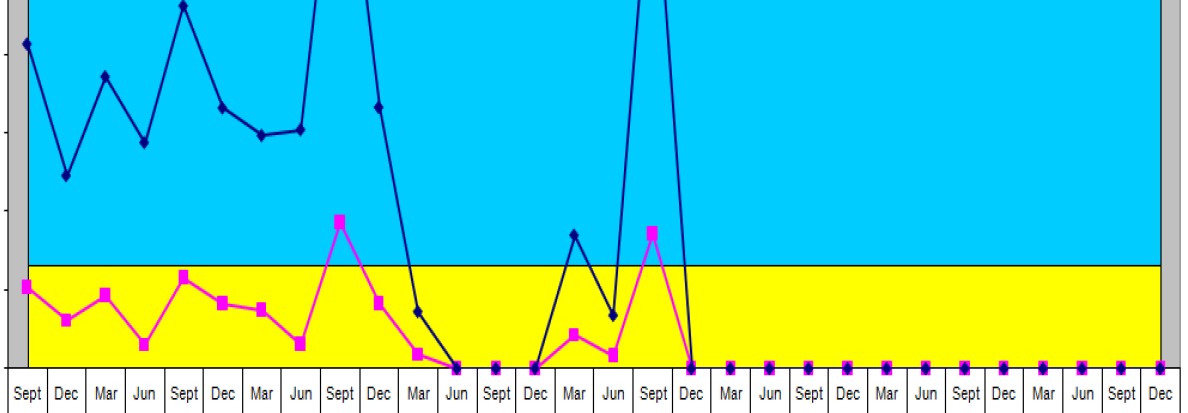
4000

UPOtuACTUAL TOTAL QUARTERLY & ANNUALLY SAlOl MONITORING

3000

2000

1000



t::::::Annu.aiSAIDI ba!Hne

c::::::::::J O.mterty SAlOl blsrine

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-+- Ar.tuillySAIOI

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3500

3000

2500

2000

1500

1000

500

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--+-"' *ualy* SAl01

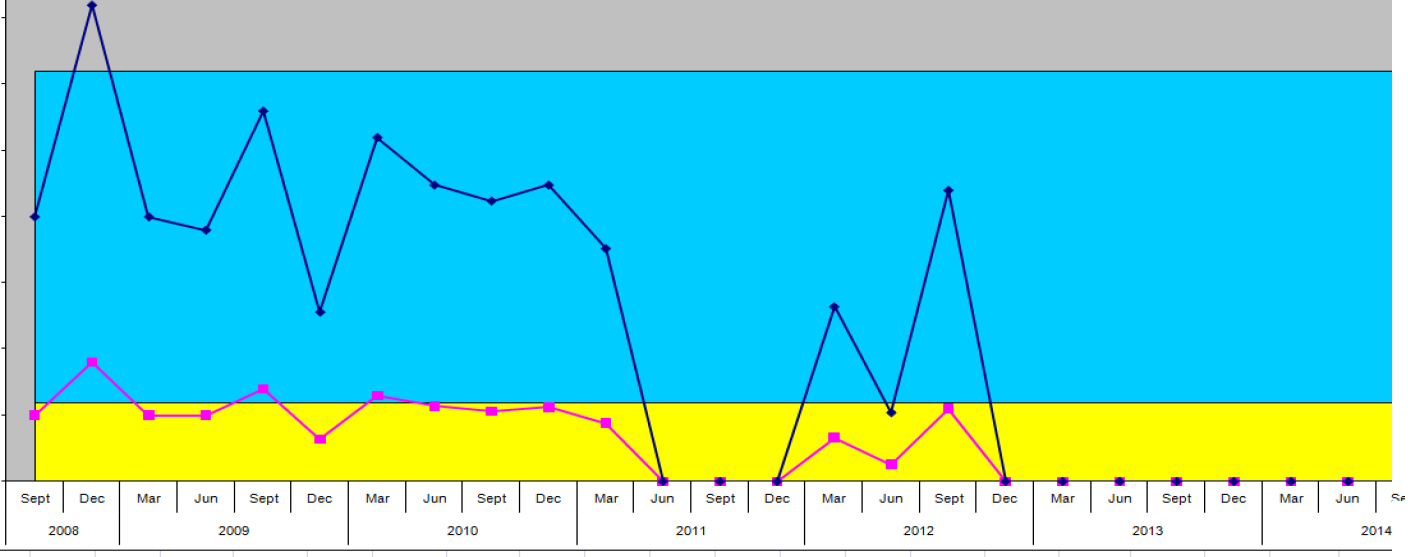
2008 2009 2010 2011 2012 2013 2014 2015

• SAlOl to be reduced by 20% by 2015

• Plan interruption is included since 1st Quarter 2009.

Appendix 7- System Average Interruption Frequency Index (SAIFI)

40



UPOLUACTUAL TOTAL QUARTERLY & ANNUALLY SAIFI

35

30

25

20

15

0

3 10

4

*5*

7

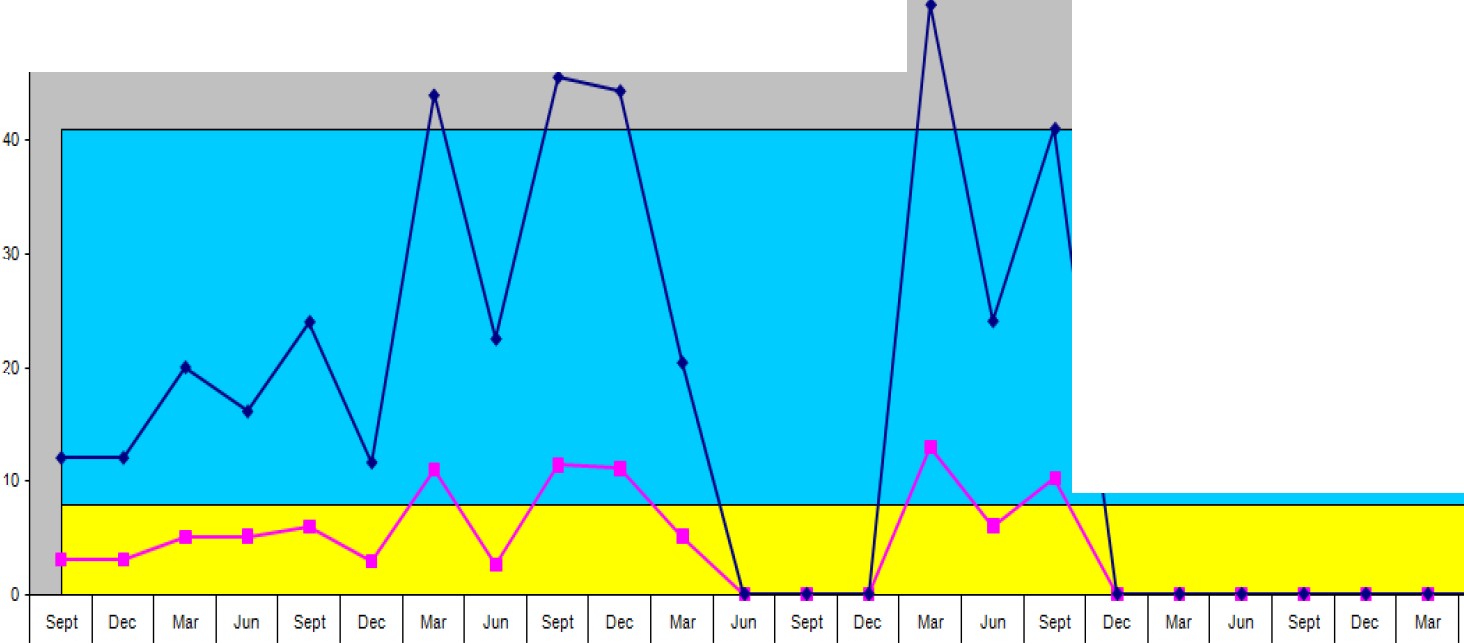
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*5*

OOr-------------------------------------------------------------------------------------------------



SAVAIIACTUAL TOTAL QUARTERLY & ANNUALLY SAIFI

50

2008 2009 2010 2011 2012 2013

• SAIFI to be reduced by 20% by 2015

• Plan interruption is included since 1st Quarter 2009.



Asian Development Bank

Appendix 8- PMU Current Organisational Structure

EPC PROJECT MANAGEMENT UNIT

Revi sed 14 Sept 2012

EPC Board of

Directors

General

Manager

Tologata Tile Tuimalealiifano

Project

Manager Fonoti Perelini S. Pereli ri (kting PrOJeCt l\llanager)

(J \*;J ----1-----1 Secretary I Peta Collins & 1driver

Transmission &

Generation Elec.

ESU

Project

I I

ESU

Social Renewable Public Rei ati on

Distribution Legal

Engineer

Accountant Resettlement

Energy /Community

Engineer

Advisor

Officer

Manager Officer

Telecom

Engneer

Asolima

I I

!:l!W!.

Perelini Pere!iri and Roberto Pamin gtuan are 2 ind vidual consultants

CivilEngineer

Draftsman

Lafai Ie. J. Mau Mathew Faalepo !lsi R pa Moe

Pe eira Simanu Lemisio Solofa T wa u Yo ng !lsi

I

Grad. Elec. REAssoc.

Engineer Preinspettion Technician John Bobby Rimoni Overseer Overseer Line Overseer line Williams

Underground Construction Construction

Crew 1 Crew2 Crew3

Appendix 9- Withdrawal Applications by Contract as of June 30, 2012