



State of Kosrae
Federated States of Micronesia

KOSRAE UTILITIES AUTHORITY

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November 18, 2021

*Honorable Carson Sigrah
Governor, Kosrae State Government
Kosrae State, FM 96944*

Dear Governor Sigrah,

I am honored to submit to you on behalf of the KUA Board of Directors and staff the KUA Annual Reports for Fiscal Year 2021 as mandated by Section 7.1212 (2) of the Kosrae State Law 5-38. The submission includes an Operation Summary Reports with unaudited Financial Statement Summary Reports for the fiscal year ending September 30, 2021.

The KUA Management and Board of Directors are fortunate to sustain the normal operation during the FY2021 without any major challenges and critical problems that affected the power services to the island despite the circumstances imposed by Covid19. The fiscal operation of the Kosrae Utilities Authority is deemed stable and is summarized in the attached unaudited Financial Statements Reports for Fiscal Year 2021. The operating revenues for FY2021 were \$2,660,515 with other non-operating income of \$169,918 from Investment Income and FSM Gov't Subsidy resulted in total revenues of \$2,830,434 and total operating expenses of \$2,665,174 resulted in net income (loss) of \$165,260. The bulk of the operating revenues, approximately 53 % were spent on diesel fuel and the remaining were Personnel Cost at 19%, Depreciation at 14%, Operational and Administrative expenses at 5% and Maintenances at 4%. The remaining 5% from total revenues reflected the net income mainly derived from the non-operating income specifically from the KUA Investment with Raimond James Associates and Congress subsidy for the public street lights. As stated in the Energy Master Plan, the needed investments to improve operation and to fund projects will require substantial revenues to defray cost and to meet the energy targets for the state.

Energy sales to customers have slightly decreased by approximately 1.51% during FY2021 compared to the previous fiscal year. The Kosrae State Government, Commercial and Residential sectors had shown slight reduction in power usage and Industrial and non-Gov't sector remained constant during the fiscal year. The renewable energy from the Solar PV has contributed approximately 5% of the energy sales which has been drastically reduced from the previous years of operation due to weather condition and two roof top units were taken down at the State Legislature and Dr. Arthur Sigrah Hospital Building. Other factors affecting the decrease in sales were due to power outages, unaccounted power usage, unmetered street lights and vacated households and commercial buildings. We anticipate that percentages of renewable energy generation penetrated to the power system will be significantly increased after completion of the 1.2 Mwp capacity Solar PV grid-connected System beside the sport complex area funded by ADB and the Battery Storage Facility funded by World Bank. These two projects are currently under review and negotiation with contractors for the implementation and construction of the projects.

The Power System is currently supported by a new Power Plant with two Taithsu engine units and one CAT Unit, both with 600kwp capacity each and with available firm capacity of 1.8 Mwp to supply power to the island. Two old Engine Units, both CAT with derating capacity of 1.4 Mwp are on standby for any power needs for increased demand in the near future. The security of the supply side of the power system is sufficient with a significant reserve to provide services within the next 10 years taking into consideration the new developments and infrastructures that will be in place during the next several years. With the expected completion of the new renewable Energy Projects, the target of achieving at least 30% renewable energy will be met by these developments. The management and the Board have been focusing on increasing renewable energy and improve system efficiency as outlined in the State Energy Master Plan.

The distribution system consists of approximately 42 miles of 13.8kV overhead conductor and 1.8 miles long 300MCM underground feed to the airport and dock vicinity. The distribution feeders originate from the substation inside the generating Plant and serves the island load with three radial feeders that follow the coastal roads to the south and north of the plant. Feeder number One and number Two are double circuit on mixed Fiberglass and wood pole structures from the Power Plant substation to the Lelu Causeway, with number One feeder, an express feeder to the causeway and serving customers on the northeast and north coastal road to Tafunsak Municipality and to the industrial loads at the Harbor/Airport area. Feeder number two serves Tofol Government complex loads

and to Lelu Municipality. Feeder number Three follows the coastal road south and serves the Malem and Utwe Municipalities. The project for Walung Community is currently undergoing to install a Mini-grid Power System, a hybrid with 60kw rooftop Solar PV, 160kw battery storage and a 30kw Diesel Generator unit to achieve 100% access power services to all customers but present issue is securing easement permission from land owners and this is the main obstacle that delay the project. The challenges affecting the power lines are the growing trees near the lines that cause substantial losses to the power system.

Utwe Water System: KUA management and Board have continued to collaborate the work activities and task required under the management of the Water Specialist, Mr. Razakrisnan Manikam before transferring the Water System to KUA. During the transition period, KUA has started to bill the customers for two sections at Utwe, providing two months dummy bills for Months of February and March to educate the users of the current water consumption level for them to be aware to start conserving usage before charges are imposed on the following months. KUA staff have been working with the subject customers on payment arrangements and to manage use of the water to reduce monthly charges. KUA has continued to receive complaints from these customers and Leaders from Utwe Municipality concerning difficulties to pay for water, but since the Tripartite Agreement between the State Gov't, Utwe Municipal Gov't and KUA to bill and collect as the role for KUA to execute during the transition of the water system, the staff continue to perform the function as agreed. After all sections are connected for the service, we anticipate the discussion and negotiation of the system to transfer to KUA will ensue for the full operation and management of the Utwe Water System. The customers has started to realized that usage of the water determine the monthly charges which most has been making their efforts in conserving water usage and make sure leakages are repaired.

Energy Development Projects that are currently undertaken and will be implemented soon, hopefully commencing construction in mid-fiscal year 2022. The Renewable Projects funded by are the 1.2 Mwp Solar PV grid-connected System to be installed beside the State Sport Complex Site and the Mini-grid Power System with 60 kwp rooftop solar PV, 160 kw BESS and 30 kwp Genset Unit at Walung. These are projects that support the State Energy Master Plan to increase renewable energy into the power system and increase access to areas that are not receiving power services. The other two energy projects funded by World Bank are the Battery Storage Facility in the range of .800kwp to 1.0 mwp and the Energy Information System (Scada) that are intended to store access renewable energies and to integrate energy sources from the grid-lines and indicate problems

with engine units and with the distribution lines. The current Covid19 situation has impacted the implementation schedules of these projects but hopefully construction will commence during FY2022 if travel restrictions will be uplifted for these contractors to travel to Kosrae.

Capacity Building and Trainings have continued to be priority focus for the operation. Trainings undertaken thru virtual training focused on Enhancement of an appropriate and economical system for O&M Diesel Generators (DG's) and Establishment of a methodology for appropriate planning and O&M of Renewable Energy (RE). These Training also cover Hybrid Power System, Maintenances and Repairs of these Power System and also management and operation of these new power technologies and appropriate planning to develop and maintain these systems. These were sponsored by JICA and conducted by Enetech Co. from Okinawa. The Energy Master Plan has stated out the road map for KUA to pursue and develop trainings for personnel to enable local force to operate and manage these systems. The participants were This Hybrid Power Generation System Training will continue during the fiscal year 2022.

The Installation of public street and yard lights both LED and Solar were continued during the fiscal year 2020 to provide safety and security to the public and customers funded by World Bank. The KUA Board also approved funding for procurement of more street lights to service customers, since the listing requesting lights were more than the available lights. The management also met with Congressmen Palik requesting funds to pay for the energy usage of these lights.

Two Energy Projects that are still in the initial stage are the Micronesian Public Sector Buildings Energy Efficiency Project and the Disaster Risk Reduction Project funded from outside donors. The Energy Efficiency Project (MPSBEE) is to improve public building electric usage and the Disaster Risk Reduction (DRR) program to prepare KUA for any emergency disasters that will impact the operation. These will be new energy development projects that will contribute toward achieving the Energy Master Plan for the State. One project that failed to secure funding from RUS is the Heat Recovery Solution Project after two submission attempts to Washington D.C. USDA/RUS Office.

The progress of achieving the energy targets stated in the Energy Master Plan is behind schedule as expected in the approved Plan due to various factors mainly funding to implement activities and projects. The Energy Plan cover 20 years span to complete 1.8 Mwp diesel generation, 6.3 Mwp Solar PV grid-connected capacity, 3.75 Mwp battery storage capacity and 100% energy access to all customers. The cost of these development is originally estimated to require around

\$37 plus million to complete in order to reduce 90% of the fuel cost and 90% reduction of annual Co2 emissions and for asset replacement. Only completion target to date is the diesel generation capacity of 1.8 Mwp that is now supplying the services to the island. The staff and the Board have continued to focus our action in meeting these energy targets if funds are secured. This is a working document that can be modified by State Leaders and stakeholders to include energy development options and recommendation to expedite our aspiration to meet these long-term energy objectives for the state.

This report highlighted major projects and activities that were undertaken and in progress during FY2021 to support our attempt in achieving the goals and objectives stated in the Kosrae Strategic Development Plan and the Energy Master Plan.

I would like to conclude this report by expressing our appreciation to you and the Leaders of the Kosrae State Government for the continued support and assistance rendered during fiscal year 2021. We are looking forward to continue working with you, the Kosrae State Legislature and the respective Kosrae State Leaders to ensure that KUA continues to provide safe, reliable and satisfactory power services to the people of Kosrae and to support the developmental goal of the Kosrae State Government.

Thank you and should you have any questions concerning other aspects of the KUA operation, please let us know.

Respectfully Submitted,

*Fred N. Skilling, General Manager
Kosrae Utilities Authority*

*Cc: Speaker Tulensa Palik, Kosrae State Legislature
Lt. Gov. Arthy Nena
Members of the KUA Board of Directors*