PROGRAM ECONOMIC ASSESSMENT

1. This document describes the economic assessment for the Asian Development Bank (ADB) Proposed Policy-Based Loan and Administration of Technical Assistance Grant to Palau: *Palau Public Utilities Corporation (PPUC) Reform program*. It has been developed according to ADB *2020 Guidance Note for the Economic Assessment of Policy-Based Lending* and *2017 Guidelines for the Economic Analysis of Projects*.[1] The policy loan of $10 million is divided into two Subprograms of $5 million each. This analysis refers to Subprogram 2 and reflects the breadth of Palau reforms, the expected development impact, and implementation costs. As the COVID-19 recovery begins the program takes on a heightened importance.

A. Macroeconomic Context

2. **Macroeconomic context.** Palau is heavily dependent on revenues from tourism and services, which contribute almost 55% of annual gross domestic product (GDP) and employ three-quarters of the country's formal workforce. Development grants under Palau's Compact of Free Association with the United States, expected to expire in fiscal year (FY) 2024, contributed substantially to a per capita gross domestic product (GDP) of $13,513 in FY2019. Before the coronavirus disease (COVID-19) pandemic, Palau had maintained an annual fiscal surplus averaging the equivalent of 3.0% of GDP during FY2011–FY2019, extending an impressive period of solid fiscal management that has resulted in annual surpluses since FY2011. This was facilitated by tax and revenue reforms that resulted in the tax-to-GDP ratio averaging 20.2% during FY2015–FY2019, up from a 17.3% average during the preceding decade. Similarly, on the expenditure side, Palau has successfully controlled the public sector wage bill, which averaged 14.7% of GDP during FY2015–FY2019, down from 17.1% of GDP on average in the decade prior. Public debt, estimated at the equivalent of about 38.6% of GDP in FY2019, was considered sustainable.[2]

3. **Coronavirus disease impact.** With annual tourism receipts reaching the equivalent of 36.5%–53.4% of GDP during FY2010–FY2019, Palau is among the most tourism-driven economies globally. To prevent the transmission of the coronavirus disease (COVID-19), Palau, like other Pacific nations, instituted a travel ban in March 2020. With no tourist arrivals during the second half of fiscal year, Palau's economy contracted by 9.7% in FY2020. Contraction deepened further to 17.1% in FY2021 as tourism continued to struggle, particularly in the first half of the year. However, gradual steps toward reopening the economy, including a safe travel bubble arrangement with Taipei,China that commenced in April 2021, followed by broader reopening to vaccinated travelers and registered vaccine tourists in July–August led to some welcome tourism gains toward the end of the year. Gains from reopening have been generally sustained, despite an Omicron outbreak in January 2022, with tourist arrivals during the first half of FY2022 already surpassing the low full-year total during FY2021. This provides some optimism for a return to economic growth in FY2022. Palau consistently maintained fiscal surpluses averaging the equivalent 3.0% of GDP during FY2011–FY2019 until the pandemic hit. With COVID-19 impacts on economic activity, total tax revenue decreased by $17.1 million in FY2021 before a projected

[1] ADB. 2020. Guidance Note for the Economic Assessment of Policy-Based Lending; ADB.2017. Guidelines for the Economic Analysis of Projects.

[2] International Monetary Fund (IMF). 2020. Republic of Palau—Assessment Letter for the Asian Development Bank. Accessible from the list of linked documents in ADB. 2020. *Report and Recommendation of the President to the Board of Directors: Proposed Countercyclical Support Facility Loan to the Republic of Palau for the Health Expediture and Livelihoods Support Program.* Manila.

slight recovery by $3.1 million in FY2022.[3] With the drastic decline in revenues and increased health and social expenditures, fiscal deficits of $28.2 million (10.9% of GDP) and $42.2 million (19.5% of GDP) were recorded in FY2020 and FY2021, respectively. The deficit is projected to decline slightly to $30.6 million (12.6% of GDP) in FY2022. The public debt-to-GDP ratio is estimated to rise from 38.6% in FY2019 to a peak of 90.3% by FY2022 to help meet the projected financing gap. Palau's FY2020 current account deficit, at 48.2% of GDP, was already the highest since at least FY2000 and deteriorated further to an estimated 55.9% in FY2021. The current account deficit is projected to gradually narrow to 45.2% of GDP in FY2022. The combination of the CROSS Act and U.S. CARES Act was a big success in mitigating the adverse impact on employment from COVID-19, and avoided widespread poverty.[4] Initial projections were that up to 27% of the workforce would likely lose their jobs; however, 2020 employment fell by only 3%, as employers utilized part-time hours to retain workers and about 23% of the workforce claimed benefits from either CROSS or US CARES.[5] A sound macro-fiscal policy framework is seen to facilitate a steady reduction in the fiscal deficit and debt burden after COVID-19. The IMF's December 2021 debt sustainability analysis shows that Palau's debt remains sustainable, but risks have significantly increased (footnote 3). This is supported by the latest assessment of the International Monetary Fund (IMF), which concludes that Palau's public debt will rise in the near-term but will remain sustainable, with concessional lending from development partners helping to mitigate debt risks. The IMF further notes that a track record of fiscal prudence allowed Palau to build buffers ahead of the pandemic.

B. Sector Context

4. PPUC was created in 2013 by the Palau Government through the Utilities Consolidation Act to merge water, wastewater, and electric utilities under a single umbrella utility, with two divisions: Water and Wastewater Operations (WWO) and Electric Power Operations (EPO).[6] PPUC is required to set water rates for customers to recover all the costs for operations and capital expenses, contingent upon compliance with water quality standards for drinking water. However, the existing water treatment facilities have been unable to meet the regulatory quality standards. As a result, PPUC has been unable to raise the water rates to obtain the revenue to improve water supply services. PPUC has recorded operating losses since the merger, meaning current services are not commercially viable. Government subsidies have been inadequate and unpredictable. PPUC's ability to stem financial losses was further exacerbated in 2017 when the Congress froze tariffs because of political concerns about perceived service costs and quality. Subsequently, PPUC has incurred significant losses and has insufficient revenue to cover its basic operations without government support. The recent Subprogram 1 has initiated significant reforms on the EPO side of the organization. The current results of these reforms are summarized in the policy matrix.

5. On the wastewater side, the ADB financed Koror-Airai Sanitation Project (KASP) is ongoing, covering the sewerage network in Koror only. The cost of this project is $28.6 million.[7] Wastewater treatment in remaining states, with the exception of Melekeok, which has a small

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[3] IMF. 2021. Republic of Palau: 2021 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for the Republic of Palau. *IMF Country Report No. 21/263*. Washington, DC.

[4] EconMap. 2021. The Road to Recovery; further updating the economic impact of COVID-19 and strategies for mitigation in the Republic of Palau.

[5] The CROSS program established a fund of $20 million under four categories of assistance, and the US CARES act provided an additional $13.5 million in COVID-19 relief.

[6] RRPL 9-41 Section 11 (b).

[7] ADB Koror-Airai Sanitation Project. https://www.adb.org/projects/42439-013/main#project-overview.

sewerage system to service the Capitol Complex, is limited to on-site treatment and does not meet environmental or health standards.

6. On the water side, the lack of an enabling environment leads to significant inefficiencies. There is currently no regulatory oversight of WWO operations, which creates a gap in managerial effectiveness resulting in a series of interrelated problems. There is a lack of consistency and transparency in tariff setting leading to an inability to recover costs of service, and low public confidence when tariff increases are sought. There is no corporate monitoring of key performance indicators, resource planning, or debt accumulation. These weaknesses contribute to operational inefficiencies and liquidity problems. For example, water losses in the distribution system have recently averaged 49%.[8] This non-revenue water (NRW) is a drain on PPUC resources as energy other resources are spent on water that never reaches customers. NRW has a substantial financial impact on PPUC since the treatment and transmission of water in Palau is highly energy intensive. Further, the WWO division of PPUC has been unable to pay its electricity bill to the EPO; at the end of FY2020 WWO owed EPO over $6.3 million, 72% of total EPO receivables.[9] Financial limitations also lead to a shortage of equipment, instrumentation, and supplies resulting in inadequate controls to ensure safe drinking water supplies at the user end.[10] Consequently, most PPUC customers in the outlying states do not drink piped water without boiling it first; or, they use catchment basins to harvest rainwater or purchase bottled water for drinking supplies.[11]

C. Rationale for Reform

7. The absence of an enabling environment has resulted in managerial, operational, and financial problems, creating a drag on public funds and the economy. The lack of a dedicated regulator, clear oversight, and procedures for tariff approval has cannibalized cost recovery and led to a significant build-up of bad debt for the electricity. Inefficient financial management has amplified the utility's liquidity gap and places PPUC in a cycle of circular debt, creating the need for continuous public funds. Lack of capital and operational inefficiencies have resulted in significant technical losses. With no industry standards for WWO, PPUC failed to supply high quality services that resulted in public health concerns. Poor governance framework limited PPUC revenues through inefficient investment planning, increasing debt and operational risks. Finally, these sector constraints hinder the possible attraction of outside investment through public-private partnerships (PPPs), which could be leveraged to significantly improve quality of service.

8. The subprogram 2 reform actions address these issues by establishing the enabling environment, thereby strengthening managerial and operational capacity. Reforms support Palau to build arm's length oversight of PPUC by the government with the utility's board corporate and operational independence.[12] The regulation reforms set first time guidance and procedures for cost-reflective tariffs and centralized single regulation for WWO and electricity at PEA.[13] The reforms provide guidance on whether cost recovery will be supplied by the end user or a subsidy, and clear guidance on subsidy provision for low-income households. In either case cost recovery

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[8] Technical losses of 49% estimated by PPUC from operational records of reported usages by zones and recorded output from tanks.

[9] PPUC. 2020. Annual Report FY2019.

[10] US Department of the Interior. 2020. Republic of Palau Water Treatment Plants - Preliminary Assessment.

[11] US Department of the Interior. 2020. Republic of Palau Water Treatment Plants - Preliminary Assessment. Confirmed by PPUC WWO, email interview with consultant. 2021.

[12] PPUC is the largest of four SOE's in Palau with combined assets of $109 million, or 43% of GDP. Reforms at PPUC set an example for Palau utilities and Pacific SOEs.

[13] Centralizing regulatory oversight in one agency is an innovative concept, as most Pacific Island regulatory practice does not centralize authority in this way.

will be achieved, including a return on capital investment, allowing PPUC to invest in system efficiency, reduce losses, and achieve long-term financial sustainability.

9. The financial management reforms support PPUC planning through first time revenue projection model for WWO. An annual revenue model is included as a precedent to the cost-recovery tariff petition, and the revenue enhancement action plan provides three executable strategies for increasing the PPUC liquidity position, setting the stage for significant service improvements.[14] The business analytics procedures will provide the PPUC with a set of tools to help set investment and performance targets, measure actual performance against those targets, and then report performance to the Government. This procedure is closely aligned to the statement of corporate intent (SCI) and audited annual report, augmenting performance accountability. These actions address current investment decision making and capital adequacy problems, and support the Government's objectives for sustainable SOEs, by providing a model for SOE financial management.

10. Corporate governance and transparency reforms build on completed actions under subprogram 1. SCI and key performance indicator (KPI) targets, benchmarked to industry standards, provide key public accountability documents strengthening public trust.[15] The debt procedure will guide PPUC in originating, managing and disclosing its borrowings, facilitating strong rationale for new debt based on the utility's corporate credit. Finally, these reforms include a first time capacity building development plan with specific, time-bound steps and funding to ensure diversity, inclusivity and gender equality, which will enhance managerial effectiveness and service provision.[16] Together, these guidelines continue the corporatization of PPUC, requiring it to operate on transparent, commercial principles. The expected result is much higher levels of financial and operational performance, including the ability to address water quality and service issues.

11. Finally, private sector market access reforms will extend the transformations initiated in Subprogram 1, by strengthening the legal framework for IPPs and other PPPs to invest in both electricity and water. On the electricity side, a resolution on least cost generation and transmission plan allows the phase out of depreciated assets, paving the way for renewable investments. On the water side, private providers find it very difficult to invest due to market failure and a poor enabling environment. Market failure is the result of the low cost of water, and an inadequate tariff setting process. The poor enabling environment has several components specific to attracting investment. First, there is no objective process for determining remuneration for the investor, or transparency procedure. Second, there is no single governmental agency that can oversee the investment process. Third, poorly maintained delivery infrastructure has discouraged suppliers.

12. The reforms are also important in assisting the nation with its COVID-19 recovery. Water system efficiencies can reduce government subsidies of the national utility, allowing for resources to be better spent in other economically productive places (subsidies to PPUC have averaged $2.6 million in recent years, or 1% of annual GDP). Poor quality of service and inefficient delivery

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[14] Estimated at $4 million, the Plan reflects high priority projects that are viewed as "quick wins" for improving PPUC's liquidity in WWO by $8 million. First, reducing network losses in the Ngerkesewaol water supply will result in a cost savings of $3.1 million over 10 years. Second, replacing water pumps at Ngerikiil and KAWTP, which have passed their economic life, with energy efficient units will save $1.2 million in energy and maintenance costs annually and avoid costly service interruptions. Third, improvements of pump stations and reservoirs at select outlying states will improve service and water quality, recovering up to $3.7 million over 10 years.

[15] The SCI has been prepared by PPUC in accordance with the guidelines in Executive Order 373 and is intended to be a public summary of PPUC's corporate plan disclosed on PPUC's website and published in media.

[16] Under approved capacity building procedures, PPUC will strengthen planning and budgeting for training to expand its pool of skilled employees, including women, in technical and management roles.

of water place added costs on public health and industry. Fiscal resources, now required to sustain the utility, could be more productively spent on recovery efforts such as job creation efforts or programs to protect the most vulnerable.

D. Program and Policy Formulation

13. **Reform area 1: Tariff reforms managed**. This output is essential to build PPUC's sustainability based on justifiable, objective, and transparent regulation and tariff settings. PEWA's regulatory mandate was expanded to enable the agency oversight in WWO tariffs and regulation through legislative amendments passed by the Olbiil Era Kelulau. Under new mandate, PEWA enacted regulations for setting of cost recovery tariffs for WWO and guidelines for WWO tariff petition that enable PPUC to generate sufficient revenue to cover its fixed and variable costs for infrastructure and produce accountable and public justification for revenue targets. To comply with the new regulations, PPUC has prepared and submitted its first WWO tariff petition to PEWA.

14. **Reform area 2: PPUC financial management enhanced.** Under this area of reform, PPUC's financial management is enhanced by performance monitoring and analytics integrated into corporate planning consistent with best practice. The new analytics will standardize PPUC's performance monitoring and planning with industry requirements. The action also supports the government's objectives for sustainable SOEs, by providing a model of SOE financial management and performance disclosure. The PPUC board approved the required corporate annual revenue model for WWO (2022–2024). This model supports PPUC's financial projections based on its revenue requirements—i.e., the total amount of revenue required to recover its costs of WWO, where such costs include prudent operation and maintenance costs and reasonable rates of return on debt and equity required to finance investments. With approved PPUC's revenue enhancement action plan, the utility has prioritized high-value emergency actions to restore WWO sustainability.

15. **Reform area 3: PPUC corporate governance and transparency strengthened**. To comply with the Palau's SOE reform objectives, the Ministry of Finance (MOF) approved performance monitoring policy and procedures for SOEs (including PPUC) based on OECD Guidelines for Corporate Governance of SOEs. This qualifies MOF for comprehensive and "arm-length" monitoring of SOEs performance without jeopardizing independency of SOEs' boards and operations. The expected results are (i) much higher levels of SOEs performance transparency, (ii) comparability of performance indicators among SOEs and with industry benchmarks; (iii) MOF's enhanced ability to monitor SOEs public and commercial debt. Also, PPUC has developed and published its first SCI which is a key public accountability document creating greater public confidence in the utility's operations and targets. The debt management procedure approved by PPUC board will ensure that PPUC has an effective mechanism to originate, manage and disclose its liabilities in compliance with international financial reporting and audit standards. As PPUC's ability to borrow is highly dependent on government support, the debt management procedure sets formal targets for capital structure and debt ceilings consistent with SCI approved by PPUC board. Finally, the board nomination procedures will ensure a transparent and equitable board selection process by providing a specific skills-based director selection and appointment process.

16. **Reform area 4: Market access for private sector participation in energy sector improved**. Under this policy area, the government has enacted PPP transparency legislation to strengthen market confidence that signed power purchase agreements are based on justifiable, objective and transparent criteria. These procedures enable the MOF to efficiently manage fiscal risks from SOEs' contingent liabilities under PPP transactions. Also, PPUC board approved a

least cost power generation and transmission enhancement plan for 2022–2025 to phase out depreciated assets and prioritize renewable energy evacuation compliant with PPUC's capacity plan approved under Subprogram 1.

E. Transmission Mechanism

17. The transmission mechanism begins with the creation of an enabling environment that leads to efficiency gains, an economic benefit. Efficiency gains allow for investments in service and water quality resulting in health benefits. Finally, sector self-sufficiency can lead to associated benefits of fiscal savings and private investment. Output 1 brings regulatory oversight into one body, the PEA. The Output also provides a framework to determine and approve a cost recovery tariff petition. Cost recovery helps to provide the resources to overcome inefficiencies and improve water quality. Transparency rules will make subsidies more targeted and clear. Awareness raising procedures allow customers to offer public input on service quality, tariffs and the tariff determination process. Output 2 includes Board approval of a revenue requirement model, a revenue enhancement action plan, and a business analytics procedure. These will also improve operational and financial efficiency allowing PPUC to anticipate investment needs, improve liquidity, and access resources for service improvements, including water quality to outlying states, leading to health benefits. Output 3 strengthens governance and transparency rules for all SOEs by establishing a performance monitoring policy and procedure. As a part of the national reform, the PPUC Board will approve a statement of corporate intent, KPI targets, a sustainable debt management procedure, and board nomination and integrity procedures. The rules will ringfence PPUC and put in place a rigorous process for budgeting, investment, and debt accumulation. Investment decisions will be vetted by the investment committee, with full transparency to shareholders. The process aims to ensure the right investments are made. This disciplined process will, over time, enhance the creditworthiness of PPUC, open vital new sources of capital, reduce reliance on government, and further improve service. Output 4 builds on these policies by providing a smooth pathway for private service providers to invest in the system through PPP in WWO and EPO. Without the policy actions, a business-as-usual scenario prevails, and PPUC remains stuck in inefficiencies, with limited means of raising capital or revenues to improve quality of service. With the policy actions Palau can realize the economic benefits listed below.

F. Economic Benefits Assessment

18. Benefits to full program implementation come from three categories: (i) efficiency savings, (ii) health benefits (from DALYs reduction), and (iii) associated benefits.

19. **Baseline Assessment.** Palau already consumes a high volume of water compared to other countries, and demand is not expected to rise over the next 10 years due to stable population, increasing tariffs, and water-use reduction campaigns.[17] The central Koror-Airai water treatment plant (KAWTP) processes 1,027 MG/year.[18] Due to high loss rates of 49%, customers of KAWTP receive 523 MG/year (504 MG/year are lost as NRW). In addition, the outlying states (representing 21% of the population) consume about 139 MG/year,[19] bring the total consumed to 662 MG/year. Water in the outlying states is not potable and therefore receives a reduced tariff charge, in line with 2011 prices (this tariff falls below both current rates and WTP).

[17] JICA 2018 water report. Reference to be added.
[18] PPUC operational data (2021).
[19] ADB consultant's estimates based on PPUC operational data for 2021.

a. Efficiency Savings

20. With the program, the policy actions enable PPUC to improve financial and operational efficiencies resulting in the ability to make investments to reduce NRW, and increase delivery efficiency. First, reductions in NRW will provide an efficiency costs savings for PPUC and the economy. Without the program, PPUC spends a significant amount of resources on energy and other expenses treating and pumping water that never reaches end users. With the program, PPUC has adequate resources and procedures in place to prioritize investment in NRW reduction resulting in energy cost savings for water treatment and transmission, as well as a reduction in the quantity of chemicals (which are all imported) required to treat water. Second, the Revenue Enhancement Action Plan will replace water delivery pumps at Ngerilill and KAWTP with energy efficient units, saving additional energy and maintenance costs each year. [20] The pumps currently in use are well beyond their useful lives and frequently need to be taken offline for repair, leading to periods of low flow and occasional service stoppage. This situation continues without the program.

b. Health benefits: value of DALYs reduced

21. The health benefits of potable water delivery to the outlying states would be substantial, estimated at over $660,000 annually as PPUC upgrades its water treatment to those communities. Currently water delivered to the outlying states, which represent 21% of Palau's population (about 950 households), is typically boiled before drinking to prevent waterborne diseases. The World Health Organization's disability-adjusted life years (DALY) data of the Pacific Islands indicates that approximately 5% of total DALY is derived from diarrheal diseases. These are considered to be typical waterborne diseases. Assuming that the total population boiling their water as the probable incidence of disease, a WHO estimated factor of 0.05 for the condition, and a life year expectancy of 69 results in an economic loss of $173 per year without the program for those living in the affected areas. When multiplied across those affected (3,817 individuals) the annual loss is $660,000. With the program, PPUC will receive adequate funds to cover costs of service, including service and quality improvements to outlying states. They will also open a community forum by which customers can comment on service needs. These steps will enable them to make the appropriate water treatment investments to gradually provide fully improved water in the outlying areas. The cumulative savings are estimated at over $6.6 million over ten years.[21]

c. Associated benefits

22. In addition to these benefits, there are others that may emanate from the program. The policy actions produce an associated "fiscal" benefit if avoided subsidies to WWO can be put to economically productive use. Palau's government could realize budget savings averaging $2.6 million annually (1% of GDP), through avoided subsidies (the average annual value of operations and capital grants since 2013). As a result of the program, both PPUC and the central government will have a clear picture on whether annual subsidies are required, and for what purpose; decisions can be made whether to cover costs with subsidies or end user charges. Without the

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[20] The KWh savings per year for each 150 HP Motor running at 5,840 hrs/year (running 16 hours per day x 365) is 16,375. KWh savings per year per 100 HP Motor running at 5,840 hrs/year (running 16 hours per day x 365) is 11,404. The replacement of 7 motors yields an energy savings of 104,356 kWh/year. With tariff applied at 21¢, this leads to a benefit of about $220,000 over ten years. Maintenance expense of about $1 million over 10 years is added.

[21] WHO. 2003. *Quantifying Public Health Risk in the WHO Guidelines for Drinking-Water Quality: A Burden of Disease Approach.*

program, Palau continues to provide subsidies to PPUC on an emergency basis. At the current rate, over the next 10 years total government transfers to PPUC would be $26 million (10% of 2019 GDP). The savings may allow Palau to redirect resources to address other pressing issues, including the COVID-19 response and post-pandemic recovery measures.

23. As an additional fiscal benefit, a financially sustainable PPUC makes it possible for PPUC to function as the energy offtaker for new renewable energy installations, reducing the quasi-fiscal risk associated with government guaranteed PPAs. Reducing the risk exposure of the government enables better borrowing terms when the time comes to pursue additional loans for economically beneficial projects and programs. For example, the policy actions under Subprogram 1 have already resulted in successful closure of the first power purchase agreement for 20 MW, accelerating achievement of Palau’s renewable energy target of 45% by 2025.

G. Reform Challenges

24. Policy reforms such as those presented in this Subprogram are often challenging and may face political resistance. The policy reforms do not represent significant direct costs, though their implementation may increase cost of service for some groups of the population. The government will need to determine how to distribute those costs in an affordable manner, which could entail delays in implementation, and reduce the realized benefits. For example, delays in full cost recovery for the WWO will reduce the benefits that are mentioned above. Further, any reduction in the allocation of funds for the Revenue Enhancement Action Plan would significantly reduce the benefits from that policy action. To avoid costly delays, a fully transparent tariff petition process, along with a robust awareness-raising campaign that outlines any cost increases and available safety nets, will be essential.

H. Conclusion

25. The implementation of the program will benefit Palau through policies that support a financially independent utility and a viable energy, water and wastewater sectors. Sector sustainability will lead to renewed system investment that allows for system loss reduction, and improved quality of service, including water quality. Improvements in the water sector can deliver benefits across the economy, with direct and indirect impacts on economic activity including health and productivity. In addition to economic benefits, fiscal benefits may be realized that can create additional headroom for government investment in the economy at large plus a reduction in quasi-fiscal risk exposure. The benefits also address core problems of the sector, namely, an inability to generate sufficient revenue to comply with water quality requirements, and a lack of adequate financing for infrastructure maintenance. Risks associated with full implementation can be overcome with a thorough communication process

SUMMARY REVIEW OF SUBPROGRAM 1

1. The Policy Actions from Subprogram 1 focused on the EPO side of PPUC. These were completed and adopted by PEA and the PPUC Board in October 2020. The government of Palau approved the PBL on 16 March 2021 and accepted the initial installment of $5 million.[1] These policy actions are already producing positive results.

2. **Reform area 1: Tariff reforms managed.** PEA adopted regulation for setting cost recovery tariff for electricity, and adopted the guidelines for tariff petition by PPUC. The PPUC Board prepared and approved a new tariff petition. Subsidy awareness raising procedures for poor and low-income households, including female headed households, were operationalized by conducting public hearings on tariff changes in 14 States from 3 March 2021 to 3 April 2021. Participants from the communities, women's organizations, church groups, state leadership, youth and other groups were represented. A total of 294 people participated and 42% of them were women.[2] The results of this output include a simplified tariff structure that eliminated declining block tariff for three customer classes.[3] The tariff petition from PPUC was approved by PEA on 12 May 2021. New tariffs from this petition went into effect on 1 June 2021, which enables PPUC to cover all cost of electricity operation and make forward looking investments to enhance service. The average base rate tariff (exclusive of fuel charge, which are determined separately, according to the market price of fuel) was increased by 18% after being frozen since 2018.[4]

3. **Reform area 2**: **PPUC financial management enhanced.** PPUC's Board adopted a revenue required model for electricity operations for 2021-2025, which supported the justification of the tariff petition. It also approved PPUC's revenue enhancement action plan (the Plan) for priority investment projects to restore sustainability in electricity operations in 2021. The priority investments are a pre-paid metering installation and the replacement of a control system engine at Malakal. PPUC has generated and submitted a withdrawal application, with detailed cost estimates, for disbursement from MOF, to execute the Plan. The pre-paid metering will improve PPUC liquidity by $6.3 million from accounts receivables into cash over three years. The engine replacement will reduce ramp up time from 30 minutes to ten. PPUC Board also operationalized new accounting policies and procedures that align with GAAP compliance. The most recent financial statements have been prepared under these policies, and were submitted to an

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1 ROP, House Resolution # 11-5-1s.

2 PPUC documented the following recommendations from the participants in the 14 consultations: (i) reduce power outages especially in the Babeldaob area, (ii) improve service delivery efficiency, (iii) improve customer service and efficient turnaround time for customer requests, (iv) acceptance of tariff increase to avoid subsequent compounded increases; (v) water improvement for Babeldaob and in the outlying states, (vi) review eligibility requirements of lifeline subsidy program, (vii) review calculations for sewer charges, (viii) installation of power poles and water lines to support housing development in the rural areas, (ix) review policy on crediting mechanism for subsequent electric installations, (x) provide better explanation on water meter multiplier, (xi) provide better explanation on variation of KWHs issued for prepaid (token) customers and (xii) review eligibility requirements of lifeline subsidy program.

3 There is an inclining block tariff (IBT) for residential customers, based on volume and a single volumetric tariff for commercial and government customers. The consumption tiers in the residential IBT are as follows: Tier 1 for 0 – 150 kWh/month; Tier 2 for 151 – 500 kWh/month; and Tier 3 for 501 + kWh/month. An allocated cost of service study (ACOSS) showed that, for non-residential customers, higher consumption volumes associated with Tiers 2 and 3 were not being used. Neither commercial nor government, customers were consuming at levels above Tier 1; there is no consumption in Tiers 2 or 3. Moreover, the rates for higher tiers declined as consumption increases. Gradually declining tiers of consumption are referred to internationally as a "declining block" tariff structure and are highly unusual because they provide perverse incentives for higher marginal incremental consumption of scarce resources.

4 RPL 10-19 and 10-26 prohibited PPUC from raising rates since 2018. The average base rate across all customer classes in 2019 was 10.9¢/kWh. That same base rate under the new petition is 12.9¢/kWh. (PPUC FS 2019 and PPUC Schedule of Electric Service Rates, June 1, 2021.)

independent auditor on 1 November 2020. The independent audit of the financial statements was completed by the end of 2021.

4. **Reform area 3: PPUC corporate governance and transparency strengthened.** PPUC's Board adopted PPUC's Code of Corporate Governance based on OECD's Corporate Governance Guidelines for SOEs (2015),[5] making PPUC the first SOE in Palau to operationalize the Guidelines. The board also operationalized new procedures for audit, risk and compliance management that align with international auditing standards (ISA). The independent audit on these measures will also be completed by the end of 2021. PPUC implemented gender sensitive human resource management procedures, including flexible working arrangements, introduction of parental leave and workplace harassment and discrimination policies (including gender-based discrimination and sexual harassment) on 1 October 2021 the start of the new fiscal year.[6] The Board has met its target of 30% women's participation with 2 of 6 board seats being filled by women.

5. **Reform area 4: Market access for private sector participation in energy sector improved**. Two policy actions have improved private sector market access. First, PEA approved regulations for the development of renewable energy plants by PPPs. Second, PEA also approved PPUC's capacity plan to confirm available grid capacity for renewable energy producers, and establish transmission expansion. These policies have provided the foundation for the first power purchase agreement executed for a 20 MW solar installation. This project helps Palau to achieve at least 30% of renewables in the country's energy mix. Also, PEA has initiated preparation for bidding of additional 20 MW solar generation project by 2023.

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5 OECD. 2015. Guidelines on Corporate Governance of State-Owned Enterprises. p. 11.
6 These policies were approved midway through the budget year and included into annual budget for FY 2021-2022.