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| Project Information Document (PID)    Appraisal Stage | Date Prepared/Updated: 06-Feb-2025 | Report No: PIDIA00908 |

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| |  | | --- | | **BASIC INFORMATION** |  |  |  |  |  | | --- | --- | --- | --- | | **A. Basic Project Data** | | | | | Project Beneficiary(ies) | Region | Operation ID | Operation Name | |  | EAST ASIA AND PACIFIC | P181253 | Access and Renewable Increase for Sustainable Energy | | Financing Instrument | Estimated Appraisal Date | Estimated Approval Date | Practice Area (Lead) | | Investment Project Financing (IPF) | 06-Jan-2025 | 21-Mar-2025 | Energy & Extractives | | Borrower(s) | Implementing Agency |  |  | | Federated States of Micronesia | Department of Resources and Development (DoR&D) |  |  |  |  | | --- | | Proposed Development Objective(s) | | The development objective is (i) to increase access to electricity, (ii) improve the reliability of electricity service, and (iii) increase renewable energy generation in targeted project areas. |  |  | | --- | | **Components** | | Electricity Service Expansion Renewable Energy Generation Institutional Strengthening and Implementation Support | |

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| |  | | --- | | **PROJECT FINANCING DATA (US$, Millions)** |  |  |  | | --- | --- | | **Maximizing Finance for Development** | | | **Is this an MFD-Enabling Project (MFD-EP)?** | Yes | | **Is this project Private Capital Enabling (PCE)?** | No |  |  | | --- | | **SUMMARY** | | |  |  | | --- | --- | | **Total Operation Cost** | **42.00** | | **Total Financing** | **42.00** | | **of which IBRD/IDA** | **42.00** | | **Financing Gap** | **0.00** | |  |  | | --- | | **DETAILS** |  |  |  | | --- | --- | | **World Bank Group Financing** |  | | International Development Association (IDA) | 42.00 | | IDA Grant | 42.00 | |
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| |  | | --- | | Environmental And Social Risk Classification | | Moderate |  |  | | --- | | Decision | | The review did authorize the team to appraise and negotiate | |

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| **B. Introduction and Context** |

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| Country Context |

1. **This Project Appraisal Document (PAD) covers Phase 3 of the Accelerating Sustainable Energy Transition Program under the Multi-Phase Programmatic Approach (MPA).** Phase 1 of the MPA was approved by the World Bank’s Executive Directors on September 24, 2024 (P181555, Report No. PAD 5623). With Phase 1, the Board approved an overall financing envelope of US$2.5 billion for the six East Asia and Pacific (EAP) countries listed under the MPA, including US$1.9 billion in International Bank for Reconstruction and Development (IBRD) financing and US$600 million in International Development Association (IDA) financing. The Program was declared effective on October 29, 2024. Soon after, Phase 2 of the MPA, consisting of an IBRD loan of US$47 million for Mongolia, was approved by the Regional Vice President on November 13, 2024. Phase 3 is proposed to benefit the Federated States of Micronesia. The proposed IDA grant of US$42 million for Phase 3 does not exceed the approved Program envelope.
2. **The Federated States of Micronesia (FSM) is a dispersed archipelagic nation in the western part of the North Pacific Ocean.** It comprises over 600 islands stretching 2,700 kilometers from west to east and grouped into four semi-autonomous states: Pohnpei, Chuuk, Yap and Kosrae. Each of the four states consists of a main island surrounded by numerous outer islands, except Kosrae. FSM has a population of about 114,164 persons in 2022 (World Development Indicators, 2023) of which 47 percent live in Chuuk, 35 percent in Pohnpei, 11 percent in Yap, and 7 percent in Kosrae. While each state has its own executive and legislative bodies, the national government based in Pohnpei is responsible for setting national directives and visions, facilitating coordination of functions among the states and in international relations. FSM maintains a close relationship with the United States (US) through a Compact of Free Association (“Compact”), under which the country receives yearly financial transfers. The Compact IV was approved by the US in March 2024 and will deliver a total of US$ 3.3 billion in assistance to FSM for the next 20 years.

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| Sectoral and Institutional Context |

1. **The Department of Resources and Development (DoR&D), through its energy and water division, is responsible for the energy sector development, coordination, and program implementation.** DoR&D comprises six divisions that oversee **six** sectors: Energy and Water, Marine Resource, Trade and Investment, Agriculture, Statistics, and Tourism. The Energy and Water Division is responsible for developing and implementing national energy policies, programs, and projects in coordination with State Governments and acts as a coordinator with regional and international counterparts. The main coordination mechanism on energy between the national and state governments is undertaken through the National Energy Workgroup (NEW), a platform, chaired by the Department’s Secretary, that brings together key national departments, the Office of Development Assistance, state-level energy workgroups, and state power utilities, to oversee all national efforts in the energy sector, including reviewing progress on the implementation of the energy policy and programs/projects, and coordinate overseas development assistance. The Division implements programs and projects through dedicated project implementation units (PIU) with support from the Department of Finance and administration (DoFA), which hosts a Central Implementation Unit (CIU) that provides supports on financial management (FM), environmental and social aspects, and procurement for all World Bank-financed projects. DoR&D’s Energy and Water Division also liaises with the Department of Environment, Climate Change and Emergency Management (DECEM) on climate change mitigation and adaptation and disaster management.
2. **The national and states Energy Master Plan (EMP), 2022 NDCs, and 2024-2050 National Energy Policy (NEP) provide the energy sector plans and goals**. The national and state's EMPs, developed under the World Bank-financed Energy Sector Development Project (P148560 closed on September 2019) and adopted by the Government of Federated of Micronesia (GoFSM) in April 2018, provide a 20-year roadmap and investment requirements on energy infrastructure for each state. The EMP also provides a clear focus on empowering women mainly through energy provision and improving health outcomes. The EMP has informed the development of FSM’s NDCs. In 2022, the FSM submitted its updated NDC goals[[1]](#footnote-2) which include updated energy sector targets: By 2030, to (i) reach universal electricity access (100 percent) nationwide, (ii) increase electricity generation from renewable energy to more than 70 percent of total generation, and (iii) reduce carbon dioxide emissions from electricity generation by more than 65 percent below 2000 level. Recently, in 2024, FSM updated its 2012 National Energy Policy (NEP). The 2024-2050 NEP, endorsed by the Government in August 2024, highlights the national energy vision to improve the life and livelihood of all citizens with affordable, reliable, and environmentally sound energy. Thus, the NEP re-emphasizes the energy sector goals of FSM becoming less dependent on imported energy by meeting at least 70 percent of electricity generation from renewable energy and achieving 100percent electrification (including the lagoon and outer islands) by 2030.
3. **At the state level, power generation and supply are managed by state power, water, and sewerage operators—Chuuk Public Utility Corporation (CPUC), Pohnpei Utilities Corporation (PUC), Yap State Public Service Corporation (YSPSC), and Kosrae Utility Authority (KUA)**. The utilities were established by state laws between 1991 and 1996 and their board members are appointed by state governors. They are responsible for electricity, water, and sewerage services provision covering generation/production/collection, distribution, and commercialization in their respective states, and servicing together about 12,750 electricity customers in the FSM. The state power utilities operate on a commercial basis with their own tariff structures and rates, ranging from 37 to 55 US cents per kilowatt hour (kWh) on main islands[[2]](#footnote-3) (please refer to Table 1 for detail). Tariffs are reviewed and approved by state governors in consultation with state legislature and utility boards. The four state utilities have together formed the Association of Micronesian Utilities (AMU), endorsed by the President in 2010, to provide a single organization to promote financial sustainability, facilitate international partnerships, and work more effectively with suppliers and other private sector players. Besides the four utilities, Vital, a state-owned enterprise formerly known as FSM petroleum corporation, is responsible for imports and sales of petroleum products in the four states. It supplies diesel to the state utilities for power generation. To help bridge power supply deficit, Vital entered into a power purchase agreement with PUC to provide 1.05 megawatt (MW) diesel-based generation and with CPUC to generate power in the island of Tonoas.
4. **Reflecting the island configuration, FSM’s power system landscape comprises four main grids in the four state main islands, and mini/micro grids in few outer islands.** The Pohnpei main island grid—servicing 7,648 customers—is the largest, followed by the Yap main island grid with 2,624 customers, Weno island main grid (in the State of Chuuk) that supplies 2,600 customers, and the Kosrae grid (around 2,000 customers). Besides the main grids, mini or micro grids are operational in seven Yap outer islands (two dieselfueled and five are solar), and one outer island in Chuuk. Kosrae is a single atoll with no outer islands. With this power system, about 76 percent of all households in the FSM are estimated to have access to some form of electricity. The total installed (nameplate) power capacity is estimated at 42 MW, of which 36 MW (86 percent) are from diesel fuel power generation and 5.9 MW (14 percent) from various renewable sources (solar photovoltaics [PV], wind turbines, and hydropower). About 52 percent (19 MW out of 36 MW) of the installed diesel generation capacity is available, while the overall peak demand is currently estimated at 13.3 MW and expected to reach about 22 MW by 2030. At the state level, the available diesel generation capacity provides no generation margin to meet the peak load in Kosrae and Pohnpei. Table 2 presents key power sector data collected from state power utilities, national policies, and Pacific Islands’ power sector benchmarking reports. The main challenges in the development of the FSM power sector include (i) the high dependence on diesel for power generation, (ii) the significantly low electricity access rate in Chuuk, (iii) the unreliable power supply in selected main grids coupled with weak climate resilience, and (iv) the relatively weak institutional capacity.
5. **The country’s high reliance on diesel raises energy security concerns and has led to high electricity tariffs.** While FSM has made considerable efforts to increase the share of renewable energy in its power generation mix over the last decade, about 81 percent of the installed power generation capacity is based on diesel. The four utilities use about 4.6 million US gallons of diesel annually to run their power generators. Data collected from Vital indicates that the power sector is the second highest user of fuel, accounting for 36 percent of the imported fuels (with the transport sector being the top user). Annual expenditures on diesel imports for both power generation and transportation are estimated at around US$50 million in 2023, representing about 11% of GDP. The high reliance on imported diesel for power generation makes FSM’s economy vulnerable to fuel price fluctuation and poses threats to its energy security. In addition, the dominance of diesel in power generation mix has led to FSM having the second highest residential electricity tariffs in the PICs for average residential consumption of 100 kWh per month, according to the Pacific Power Association’s 2021 benchmarking report. Residential electricity tariffs in the FSM, range from US$37 cent/kwh to 55 cent/kwh across the four states, with Chuuk’s electricity tariffs in the Tonoas Island (US$55 cents/kwh) and Weno islands (US$51 cents/kwh) being the highest in the FSM and Pohnpei (US$40 cents/kwh) and Yap (US$37 cents/kwh) having the lowest tariff.
6. **Two thirds of Chuuk’s households have no electricity service, while more than 85 percent of households in Yap, Pohnpei, and Kosrae have service.** The national electricity access rate of 76 percent masks significant access disparities across states and between main and outer islands. The electricity access rate is currently estimated at 98 percent in Kosrae, 94 percent in Pohnpei, and 87 percent in Yap. Chuuk is lagging with an electrification access rate of 33 percent, though it has increased from 27 percent in 2018 due to the electrification of the Tonoas Island in 2022. Within Chuuk, the access rate varies significantly across islands. Only 2 of the 42 inhabited islands in Chuuk State are electrified—Weno, the capital city or main island and Tonoas—where access rate reaches 90 percent. Many outer islands in Chuuk are unelectrified (without mini or micro grids), with very few facilities using solar home systems (SHS). The 2018 Energy Master Plan estimated that at least US$86 million of capital investments will be required to reach universal access in Chuuk, through the construction of over a dozen of mini grids in relatively concentrated settlements and the installation of over 1,500 stand-one SHS for dispersed settlements. The World Bank-financed Sustainable Energy Development and Access Project (SEDAP) plans to complete the electrification of three islands (Udot, Eot, and Satowan) by September 2025, whereas the Australian Department of Foreign Affairs and Trade (DFAT) is funding the electrification of three other islands (Fefen, Piis Paneu, and Etten). Nonetheless, more needs to be done. The Chuuk State Energy Workgroup has prioritized the electrification of nine islands[[3]](#footnote-4) and has been seeking donor funding.
7. **A sizeable proportion of households with electricity connection receive unreliable electricity service due to aging power supply assets, inadequate maintenance, and extreme weather events.** Though data reliability on unplanned and planned power outages needs to be improved across the Pacific, the main grids in Pohnpei and Kosrae experience some of the highest duration of power outages in both FSM and across the Pacific, with System Average Interruption Duration Index (SAIDI) averaging 1,700 customer minutes, over eight times the Pacific average of 200 customer minutes. The unreliable electricity service in both Pohnpei and Kosrae main grids is mainly due to aging network with dilapidated and/or slightly leaning wooden poles, corroded wooden cross arm, old insulators, and lack of sufficient equipment to manage vegetation (tree branches along power lines). Also segments of the power infrastructure are located near the coastlines in low-lying areas and therefore, suffer from flooding, storm surge, corrosion, and high winds. Yap has experienced the highest number of category 3 typhoons in the FSM and the radial configuration of its distribution network —with very limited redundancy—has left critical facilities without power after storms. For instance, Typhoon Sudal knocked down the entire Yap main island network in 2004, leaving all customers without power for 21 days, whereas Typhoon Maysak damaged the Falalop’s areal distribution network in 2015, leading to power outages for 28 days. Rehabilitating main island distribution networks to replace assets in poor condition, enhance resilience, and provide critical redundancy is critical to improve service reliability.
8. **Capacity needs to be strengthened across the energy sector.** Expertise on energy policy, regulation, and planning is lacking within the DoR&D’s Energy Division, which has limited full time staff and relies on external advisory services and consultants for program implementation and monitoring. As FSM plans to promote and leverage private sector investments to achieve its renewable energy generation targets, there is a critical need to build up a regulatory capacity, including developing, monitoring, and enforcing essential regulatory tools/mechanism. At the state level, utilities lack planning and design skills and have insufficient capacity to adequately maintain renewable energy technologies. PUC recently hired an electrical engineer. CPUC and YSPSC rely on one part-time electrical engineer. KUA has no electrical engineer. Three utilities (CPUC, YSPSC, and KUA) have no civil engineers. While CPUC has 14 certified technicians and Yap 8 certified technicians, a small share of the technicians is certified on maintenance of renewable energy technologies, including batteries and control systems. Both PUC and KUA have no certified technicians. Across national and state levels, women involvement in technical positions is very weak, and the sector needs to ramp up efforts to develop and attract female talents.

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| **C. Proposed Development Objective(s)** |

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| Development Objective(s) (From PAD) |
| The development objective is (i) to increase access to electricity, (ii) improve the reliability of electricity service, and (iii) increase renewable energy generation in targeted project areas. |

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| Key Results |

1. The proposed Project Development Objective (PDO) level results indicators are the following:

* People provided with new or improved access to electricity [number]
* Average reduction of unplanned power outages on the distribution networks in Pohnpei, Yap, and Kosrae [percentage]
* Renewable energy capacity enabled with direct support [MW]

1. The key intermediate result indicators include:

* People provided with direct access to electricity through new connections (Number of people) (CRI)
* Projected lifetime net GHG emissions [tCO2]
* Installed energy storage capacity [MWh]
* Increased share of women in technical, engineering, and/or management positions [percentage]
* Beneficiaries satisfied with outreach activities [percentage]

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| **D. Project Description** |

1. **The proposed Project will contribute to the achievement of the GoFSM’s energy sector goals by expanding (providing new or improved) access to electricity service, increasing renewable energy generation, and enhancing capacity of energy related entities in the four states of FSM**. The Project will fund construction of mini grids, rehabilitation (including resilience enhancement) of distribution networks, integration of solar PV systems, technical assistance, and capacity strengthening. The proposed activities were drawn from FSM energy sector master plan investments, power utilities’ priority plans, and studies/assessments funded by both the World Bank and other development partners. The implementation of the proposed activities is expected to result in increased electricity access in Chuuk State, more reliable and resilient electricity service in Pohnpei, Yap, and Kosrae, and enhanced renewable energy integration, leading to generation costs savings and less dependance on costly imported diesel fuels. Adding to the SEDAP’s expected electrification of two islands (Udot/Eot and Satowan) and 1 MW of installed solar capacity, the two World Bank-funded projects would together increase the access rate in Chuuk by roughly 15 percent and contribute to addition of renewable energy capacity totaling 4 MW in FSM. This would be a significant contribution to the achievement of FSM’s access and renewable energy targets, and a relief from current heavy dependance on costly diesel generation. The Project activities are grouped into three components.
2. **Component 1: Electricity Service Expansion (US$27.46 million)**will (i) increase the electricity access rate in Chuuk; (ii) improve the reliability of power supply while enhancing resilience to climate and natural hazards and reducing technical losses in Pohnpei, Yap and Kosrae; and (iii) facilitate grid maintenance for the four power utilities. The Component comprises the following four subcomponents:

* **Sub-Component 1.1 – Chuuk Islands Electrification** – will implement the first major phase of outer islands electrification in the FSM, focusing on Chuuk, the state with the lowest electricity access rate. It will fund detailed studies, designs, supply, construction, supervision, and commissioning of solar powered mini grids and stand-alone solar home systems in four unelectrified Chuuk’s islands: Moch, Onoun, Tol-Wonip, and Uman. The islands were selected based on (i) land/rooftop availability, (ii) number of households, businesses, health care centers, schools, Government facilities, (iii) ease of implementation, operation & maintenance (including accessibility), and (iv) geographic balance consideration between Inner Lagoon, Mortlocks, and Northwest Island groups. In each island, depending on the settlement patterns, solar-powered mini grids will be constructed and stand-alone solar home systems installed for households far from the mini grids. Each mini grid will comprise solar PV modules, battery energy storage system, distribution networks, service drops, and prepaid meters to provide electricity service to about 672 households, health care centers, schools, government & community facilities, and businesses. Minimal back-up diesel generation (about 55 kW per island) will be provided to ensure reliable supply during peak hours. In addition, the subcomponent will help complete the construction of mini grids in Udot and Satowan, if uncompleted after the closing date of the SEDAP project. Also, a boat will be supplied to facilitate mini grid construction and maintenance. The Asian Development Bank (ADB) has agreed to promote productive uses in the selected islands.
* **Sub-Component 1.2 – Pohnpei Grid Upgrade** – will improve the automation, protection, resilience, and preventive maintenance of the distribution grid in Pohnpei main island. The subcomponent will install 10 nodal points in the distribution network[[4]](#footnote-5), integrate Supervisory Control and Data Acquisition (SCADA) system along with fiber optic cables, and replace air switches by automated remote-controlled switches to enable automated operation and power flow monitoring.[[5]](#footnote-6) It will install feeder protection relays in nodal points and automatic fault-detecting reclosers on several primary lines to reduce the duration of power outages. To enhance Pohnpei’s grid’s resilience and safety against strong winds/heavy rains, the subcomponent will replace i) aging primary wooden poles with concrete poles, ii) wooden cross arms with fiberglass ones, and iii) porcelain insulators with polymer ones in certain segments of the distribution network. In addition, it will provide PUC with bucket and auger trucks to facilitate preventive maintenance and accelerate power restoration following occurrence of natural and climate hazards.
* **Sub-component 1.3 - Yap Grid Resilience** - will enhance the resilience of Yap main island distribution network. It will fund detailed designs, supply, supervision, and installation of three underground distribution feeders[[6]](#footnote-7) to provide redundant and more reliable power to critical facilities—such as the Airport, hospital, water plant facilities, and the business center (where government buildings, the commercial center, and the radio station are located). The installation of underground distribution feeders will involve the laying out of electrical and fiber optic communication cables, and the installation of elevated pad-mounted transformers/switchgears, and remote-controlled/manual switching and reclosing equipment. To facilitate construction and operation, the subcomponent will provide accessories (pipes, joints, conduits, junctions, termination kits); equipment for trenching, soil compacting, and road asphalt repair; and a bucket truck and an auger truck. Overall, the subcomponent will transform the current radial configuration of Yap main island distribution grid into a more resilient mesh network (with underground and aerial loops), which can withstand category 3 and above typhoons, thereby reducing significantly unplanned power interruptions that are due to the aerial grid vulnerability to strong winds and heavy rains.
* **Sub-component 1.4 – Kosrae Grid Rehabilitation** – will rehabilitate segments of the distribution network, enable renewable energy storage, and facilitate preventive maintenance in Kosrae main island. The network rehabilitation will lead to a more climate-resilient network through (i) relocating power poles along erosive shoreline inland in the three main feeders of the distribution network to avoid potential storm surge and/or corrosive damage of power poles, thus maintaining a reliable delivery of electricity; and (ii) replacing dilapidated/aging wooden poles with concrete poles on certain segments on the distribution network which will lead to a substantial enhancement of climate resilience in the distribution of electricity against extreme weather events. The network rehabilitation will also enable the transfer of renewable energy, which the subcomponent will support by funding the testing and commissioning of battery energy storage that was purchased and being installed under SEDAP. The subcomponent will also provide KUA with a bucket truck and an auger truck for maintenance, true pruning, and disaster restoration activities to facilitate more rapid network restoration, thus reducing the duration of power outages after strong winds or storms.

1. **Component 2: Renewable Energy Generation** **(US$9.47 million)** will increase solar energy generation with storage and grid stability controls in Chuuk, Pohnpei, and Yap to reduce diesel generation costs and help achieve GHG emission reduction targets. The installation all solar PV systems will comply with hurricane/storm resilient standards and practices (e.g.: strengthened bolting, vibration resistant materials). The component comprises three sub-components:

* **Subcomponent 2.1 – Pohnpei Solar Energy Generation** – will fund detailed studies, designs, supply, installation, commissioning, and supervision of grid-connected solar PV systems and enable its integration with the diesel-based generation assets in the Pohnpei island grid. 1.5 MW of solar PV systems will be installed on top of roofs of hangars at the Kolonia Sports Field (Government-owned site) along with 1.5 MWh of battery energy storage systems, inverters and transformers. From the Sports Field, a distribution line/feeder will be rehabilitated and associated protection systems upgraded to transfer the power generated to the Pohnpei island grid. To ensure adequate integration, monitoring, and management of generated renewable energy, the subcomponent will fund the testing and commissioning of the SEDAP-purchased generation SCADA system to connect the added renewable system with existing hydropower and solar plants as well as the Nanpohnmal Power Plant’s diesel generators, including the SEDAP-purchased diesel generators which are expected to be installed before the SEDAP closing date. The subcomponent will also facilitate the testing/ troubleshooting (as part of the commissioning) of the SEDAP-purchased diesel generators to ensure adequate operation and renewable energy integration.
* **Subcomponent 2.2 – Chuuk Solar Energy Generation** – will fund detailed designs, supply, installation, commissioning, and supervision of grid-connected solar PV systems in the Chuuk’s Weno grid and ensure grid stability. The installation of a total of 1.5 MW will be enabled. Of the 1.5 MW, 0.5 MW will be installed on rooftops of selected state-owned facilities (schools) and piloted for a few private hotels. The pilot for private facilities will involve technical assistance to develop and agree on a business model with private facility owners, the application of the model for few hotel owners, and documentation of lessons for replication. For the remaining 1 MW, the subcomponent will enable its completion by providing technical assistance for the installation and commissioning of solar PV systems on top and canopies, technical room, and other facilities whose construction was initiated and advanced under SEDAP, but the installation cannot be done before the closing date. To enhance integration of renewable energy (considering the already existing 0.6 MW) and ensure grid stability in the Weno grid, the subcomponent will install 2 MWh of battery energy storage system, with inverters and control systems and fund required protection upgrades.

1. **Component 3 - Institutional Strengthening and Implementation Support (US$5.07 million) -** aims to strengthen the capacity of key energy sector entities such as DoR&D, state power utilities, and the PIU. It consists of three sub-components:

**Subcomponent 3.1 – Sector Development Assistance** - will help strengthen key energy sector areas such as adoption of cost reflective electricity tariffs, regulatory capacity building, energy efficiency policy, and outer island electrification. It will assist state utilities and governing entities to implement action plans to adopt cost recovery tariffs for efficient utility operation. The action plans are being developed under a separate Bank advisory activity. The subcomponent will help build up DoR&D’s regulatory capacity through twining arrangement with other regulatory agencies and the development of a regulatory framework that is conducive for private sector involvement. In addition, it will support DoR&D to develop an energy efficiency policy with an action plan to promote adoption and implementation of minimum performance standards for equipment. Also, the subcomponent will fund feasibility studies for the electrification of remaining unelectrified outer islands with promotion of productive use.

* **Subcomponent 3.2 - State Power Utility Capacity Strengthening** – will seek to enhance the capacity of the four state power utilities on operation and maintenance of renewable energy technologies and distribution networks through a combination of an apprenticeship program that promotes women’s employment, international technical expertise, and maintenance fund development. In collaboration with local (College of Micronesia) and regional education/training institutions, the World Bank-financed education project, and the World Bank-implemented Pacific Women in Power program (PWIP), the subcomponent will fund an apprenticeship pilot—combining academic training with on-the-job training—for an identified number of PUC, CPUC, KUA, and YSPSC staff to provide certified solar technicians, line technicians, and other required semi-skilled workers, with specific targets for female workers. The apprenticeship pilot’s on-the job training will be strengthened by an internationally hired solar PV technician, who will be hosted under the AMU and will rotate for a certain period in each utility, to train local PUC, CPUC, KUA, and YSPSC staff on solar PV systems maintenance and operation. In addition, internships at the utilities will also be facilitated to help build a pipeline of skilled workforce. Also, utilities will be supported to establish and operationalize maintenance funds.[[7]](#footnote-8) The capacity building activities will aim to increase women involvement in the energy sector by (i) establishing a quota for the number of women in the apprenticeship and internship intakes (ii) developing and implementing gender policy and gender action plans specific to each utility, to attract and promote the retention of women (for example safety audit, hiring practices, mentorship). Collaboration with the World Bank’s PWIP will drive action on closing gender gaps in women’s employment and raising awareness on the importance of gender equality across PUC, CPUC, KUA, and YSPSC.
* **Subcomponent 3.3 - Project Implementation Support** - will provide adequate resources to the DoR&D’s PIU to execute the project with support from the Central Implementation Unit on procurement, financial management, and environmental and social aspects. The component will fund consulting and non-consulting services, goods, and operating costs to enable the PIU and CIU to manage the project over its duration. This will include salaries of (i) an international project manager, (ii) an international electrical engineer, (iii) a local procurement officer, (iv) a local environmental and social development officer and (v) a project assistant who will transition from SEDAP to Access and Renewable Increase for Sustainable Energy (ARISE). The sub-component will also fund environmental & social risk management activities, citizen engagement activities, geographic information system (GIS)-based monitoring of project realizations, office equipment and supplies, travel/local transport, and renovation of office space to accommodate a larger PIU at DoR&D, and other incremental operational costs.

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The environmental and social (E&S) risks for the project are assessed as moderate, given that risks and impacts are expected to be temporary, predictable, and readily managed through standard design and mitigation measures. The project will seek to use borrower frameworks to manage E&S risks to the extent that these comply with the ESSs. Potential E&S risks arise primarily in relation to civil works associated with the construction of mini-grids and solar home systems, rehabilitation and upgrade of distribution networks, and installation of grid-connected solar PVs. Associated E&S risks include occupational health and safety (OHS) risk to workers, community health and safety risks, particularly where civil works take place in areas of public or community spaces, sourcing of aggregates for activities related to enhancing the resilience of existing distribution networks, waste management, ground and waterway pollution, minor land impacts associated with access to and/or use of land for installation of mini-grids and solar PV systems, real or perceived inequality across households in accessing projects benefits, and risks related to Sexual Exploitation and Abuse and Sexual Harassment amongst workers and the community. Sites for mini-grid and solar PV installation will be confirmed during project preparation. Government land will be prioritized and no involuntary resettlement or land acquisition is expected. As the the design and exact locations of project activities will be determined during implementation, an ESMF has been prepared which outlines the principles, rules, guidelines, procedures, and tools to assess and manage E&S risks and potential impacts. The ESMF includes a Labor Management Procedure (LMP), Chance Finds Procedure, and a draft Land Access Procedures to provide guidance on managing land access. Requirements and actions emanating from the ESMF are captured in the Environmental and Social Commitment Plan (ESCP). A Stakeholder Engagement Plan (SEP) (including grievance redress mechanism) has also been prepared. As project activities are planned across all four states of FSM, the project will need to include effective measures to ensure sufficient supervision and monitoring at all sites throughout implementation. There are allegations of forced labor risks associated with the polysilicon (a key input for solar panels production) suppliers. The PIU will require bidders to provide two declarations: a Forced Labor Performance Declaration (which covers past performance), and a Forced Labor Declaration (which covers future commitments to prevent, monitor and report on any forced labor, cascading the requirements to their own sub-contractors and suppliers).  In addition, the PIU will include enhanced language on forced labor in the procurement contracts. Under Environmental and Social Standard 2 (ESS2), where there is a significant risk of forced labor related to primary supply workers, the PIU will require the primary supplier to identify those risks and if forced labor cases are identified, the PIU will require the primary supplier to take appropriate steps to remedy them. Ultimately, where remedy is not possible, the PIU will, within a reasonable period, shift the Project’s primary suppliers to suppliers that can demonstrate that they are meeting the relevant requirements of ESS2. Prior to beginning the procurement process, the PIU will undertake a market analysis to identify the possible sellers of solar panels to the Project. The bidding documents will emphasize forced labor risks in solar panels and components and will require that sellers of solar panels to the Project will not engage or employ any forced labor among their work force. The World Bank will prior review procurement packages of solar panels and components to ensure compliance.

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| **E. Implementation** |

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| Institutional and Implementation Arrangements |

1. **DoR&D will implement the project with support from the DoFA and state power utilities.** DoR&D has been implementing several donor-funded projects, including the SEDAP project through a dedicated PIU, with DoFA’s CIU support on financial management, safeguards, and procurement. Under SEDAP, DoR&D’s PIU performance has been moderately satisfactory overall. Considering lessonslearned from SEDAP implementation and reflecting assessment findings, SEDAP implementation arrangements will be enhanced for ARISE implementation. DOR&D’s PIU capacity will be strengthened with a recently recruited international project manager (full time based in Pohnpei) with extensive experience in managing World Bank-funded energy projects and hiring of three additional staff: electrical engineer, procurement officer, environment and social development officer. The SEDAP project assistant will transition as ARISE project assistant. DoR&D’s PIU will be responsible for overall project implementation (including planning, budgeting, execution, monitoring, and evaluation) with fiduciary responsibility on procurement and environmental & social aspects. DoFA will retain the fiduciary responsibility for financial management as project accounting, disbursement, and fund withdrawal in FSM are intrinsically linked with the FSM Government accounting, payments, and other financial processes that are handled only by DoFA. The DoR&D’s PIU will therefore work closely with, and provide inputs to DoFA’s CIU on withdrawals, payments, accounting, budgeting, preparation of interim financial reports (IFRs), and auditing, as it is currently practiced under SEDAP. As envisioned under the CIU Impact project, the CIU will continue to provide all WB-financed PIUs—including the ARISE PIU—with training and hands-on support on procurement, environmental, and social aspects to enhance the capacity of locally-recruited staff and address implementation bottlenecks. In addition to the CIU support, the state power utilities (PUC, CPUC, YSPSC, and KUA) have designated key staff (including a focal point) who will assist the PIU over project implementation. To ensure adequate implementation within states’ territories, the State Governments and utilities will sign project implementation agreements with DoR&D and DoFA. To facilitate higher level coordination and guidance, the PIU will report to a Project Steering Committee (already operational under SEDAP and meets every three months), chaired by the DoR&D Secretary or her/his designee and comprising representatives from state governments, state energy working groups, state power utilities, the PIU, and the CIU. The responsibilities of all institutions and day-to-day project execution procedures are described in the Project Implementation Manual (PIM), which is being reviewed and finalized.

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| |  | | --- | | **CONTACT POINT** |  |  | | --- | | **World Bank** | | |  | | --- | | Alain Ouedraogo | | Lead Energy Specialist | | | **Borrower/Client/Recipient** | | |  | | --- | | **Federated States of Micronesia** | | Kwame Shiroya | | Program Manager of the Central Implementation Unit | | kwame.shiroya@dofa.gov.fm | | Rose Nakanaga | | Secretary of Finance and Administration | | rose.nakanaga@dofa.gov.fm | |  | | | **Implementing Agencies** | | |  | | --- | | **Department of Resources and Development (DoR&D)** | | Rodney Sultani | | Project Manager | | risultani@gmail.com | | Elina Akinaga | | Secretary of the Department of Resources and Development | | eakinaga@rd.gov.fm | | Faustino Yarofaisug | | Secretary of DoR&D | | fyarofaisug@rd.gov.fm | |  | |  |  | | --- | | **FOR MORE INFORMATION CONTACT** |  |  | | --- | | The World Bank  1818 H Street, NW  Washington, D.C. 20433  Telephone: (202) 473-1000  Web: <http://www.worldbank.org/projects> | |

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| |  | | --- | | **APPROVAL** |  |  |  | | --- | --- | | Task Team Leader(s): | Alain Ouedraogo |  |  | | --- | | **Approved By** |  |  |  |  | | --- | --- | --- | | Practice Manager/Manager: | Jie Tang | 02-Dec-2024 | | Country Director: | Naveed Hassan Naqvi | 06-Feb-2025 | |

1. FSM submitted its first NDC to reduce GHG emissions by 30 percent by 2025. [↑](#footnote-ref-2)
2. These are tariffs on the main islands. For outer islands, the tariffs charge is about $1.08/kWh, significantly lower than supply costs which are more than $5/kWh (especially in Yap). [↑](#footnote-ref-3)
3. The prioritized islands include Moch, Onoun, Lekinoch, Polle, Nama, Nomwin, Houk, Uman, and Tol. [↑](#footnote-ref-4)
4. The nodal points will significantly enhance grid stability and reliability because it will facilitate the efficient distribution of electricity by allowing for flexible routing based on changing demand patterns, ultimately improving the stability of the grid. [↑](#footnote-ref-5)
5. This will enable automated operation and real-time power flow monitoring, further enhancing the grid’s efficiency and responsiveness. [↑](#footnote-ref-6)
6. The total length of feeders is about 25.63 km, comprising (i) the Airport feeder (7.02 km), the Colonia feeder (5.75 km), and the Northern feeder (12.86 km). [↑](#footnote-ref-7)
7. The project will not fund the capitalization of the maintenance fund but will rather provide technical assistance. [↑](#footnote-ref-8)