



PACIFIC ENERGY UPDATE 2014

PACIFIC
ENERGY
UPDATE 2014

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For more information, contact:

Robert Guild
Director
rguild@adb.org

Anthony Maxwell
Senior Energy Specialist
amaxwell@adb.org

J. Michael Trainor
Energy Specialist
mtrainor@adb.org

Woo Yul Lee
Energy Specialist
wylee@adb.org

Transport, Energy and Natural Resources Division, Pacific Department

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Note:

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6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
Tel +63 2 632 4444
Fax +63 2 636 2444
www.adb.org

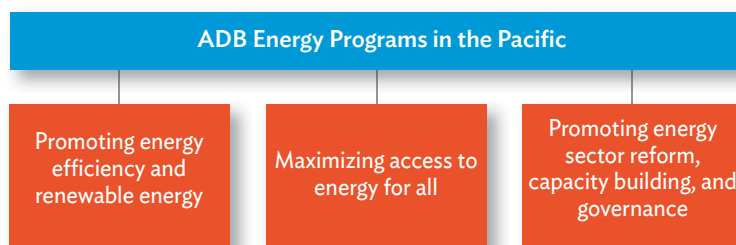
For orders, please contact:
Public Information Center
Fax +63 2 636 2584
adbpub@adb.org

Overview

The Pacific region is highly dependent on imported fossil fuels for its energy needs. Pacific developing member countries (DMCs) are extremely vulnerable to the volatile and high cost of imported fuel, which strains their economies and trade balances.

Between 2005 and 2030, demand for electricity in the Pacific region is expected to grow by about 7.0% annually, while electricity generation is estimated to increase by 6.4% annually. Pacific DMCs will likely remain dependent on expensive imported fossil fuels as the dominant source of electricity generation at least until 2030. However, they are also making increasing progress in developing alternative renewable energy sources and using available energy more efficiently.

The Asian Development Bank (ADB) provides assistance to the energy sector in Pacific DMCs to help reduce their heavy reliance on costly fossil fuels; and have reliable, adequate, and affordable energy for economically, socially, and environmentally sustainable growth. ADB enables governments of DMCs to embark on projects that will result in greater energy security and sustainability in the region. ADB's energy programs in DMCs focus on three pillars.



Promoting energy efficiency and renewable energy. ADB provides assistance to reduce reliance of DMCs on imported fossil fuels by increasing energy efficiency of existing systems and generation from renewable energy sources. Many of ADB's projects are focused on the construction of small-scale hydropower plants, development of grid-connected solar and wind power, and generation of power using indigenous fuels.

ADB is also supporting governments' efforts to improve efficiency through adoption of minimum energy performance standards for appliances; upgrade of street lighting using energy-efficient and long-life technologies; and provision of energy-efficient lighting systems to residential, commercial, and public buildings. On the supply side, ADB's projects help finance the rehabilitation and upgrade of power infrastructure and equipment; these works include resizing of transformers, retrofitting of overhead line conductors, and replacement of inefficient generator sets.

Maximizing access to energy for all. ADB supports greater access of users to energy by providing financial resources; identifying innovative solutions; and sharing information with development partners and the public and private sectors. ADB collaborates with stakeholders to replicate and scale up the best models to achieve energy access for all. In pursuit of this objective, ADB supports initiatives that expand access of poor and remote communities to energy, helping improve their welfare and quality of life.

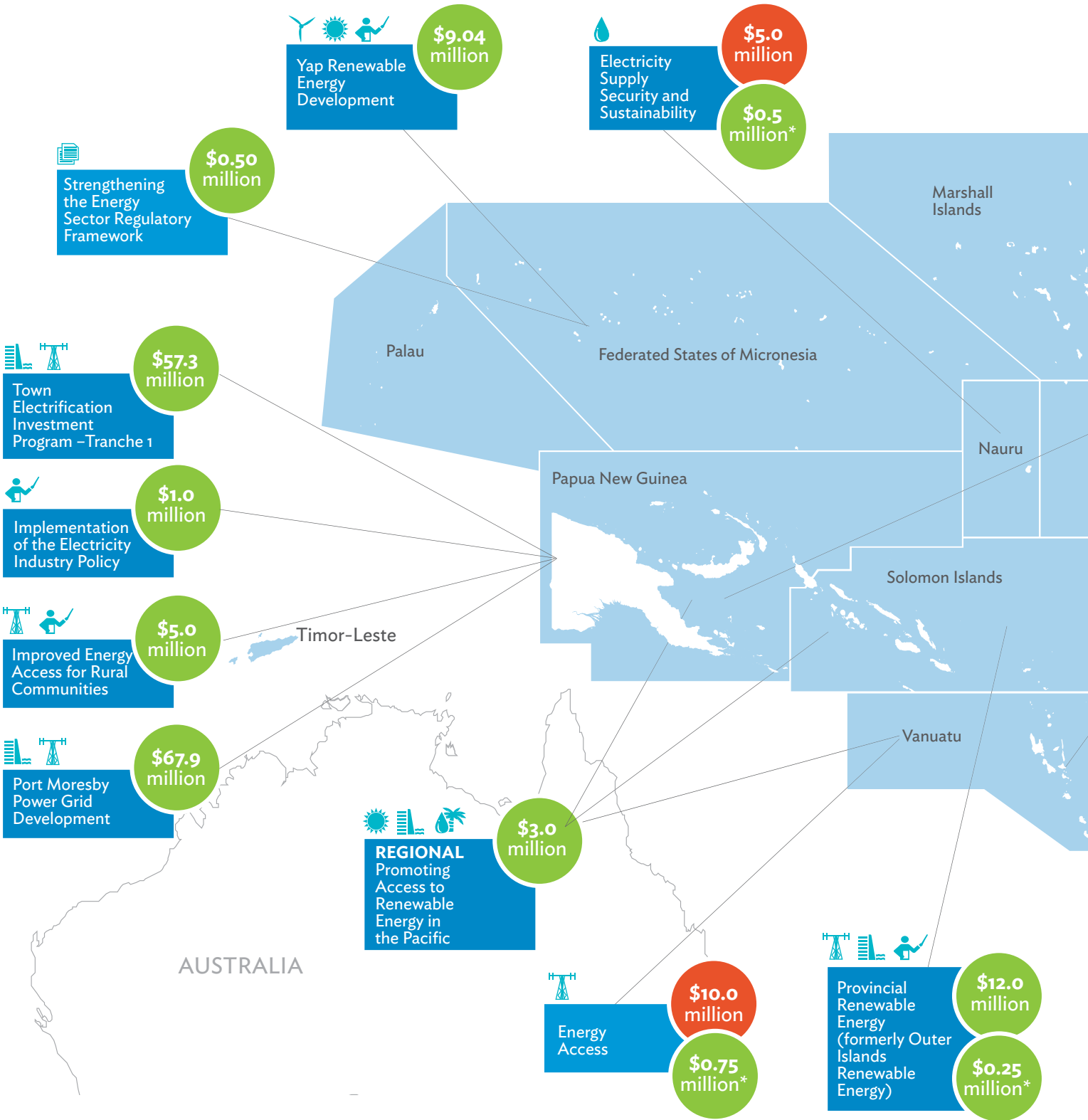
ADB thus assists in the expansion of existing distribution grids; and in the development of low-cost renewable energy generation from hydropower to increase the supply of affordable grid-connected electricity to rural households, schools, and medical facilities in targeted areas. ADB projects also support the installation of prepayment meters, enabling customers to better manage and control their expenditure on electricity consumption.

Promoting energy sector reform, capacity building, and governance. ADB assistance supports reforms, education and training, and good governance in the energy sector. It involves helping DMCs to restructure and reform their energy production and delivery systems. Projects also assist government agencies in preparing national electrification plans, improving existing regulatory frameworks, and increasing investments in renewable energy under new regulatory models.

Assistance to DMCs also entails wider information dissemination and increasing the awareness of public and private stakeholders on improved productive use of electricity. ADB projects also feature capacity building activities for counterpart government agencies and project beneficiaries. These activities include training of staff to improve the operational efficiency of power utilities; and of newly connected households in electricity safety, budget management, and options for income generation.





ADB is implementing and proposing projects in the energy sector in the Pacific region through loans, grants, and technical assistance. This update highlights the progress and developments to support initiatives on energy in the region.

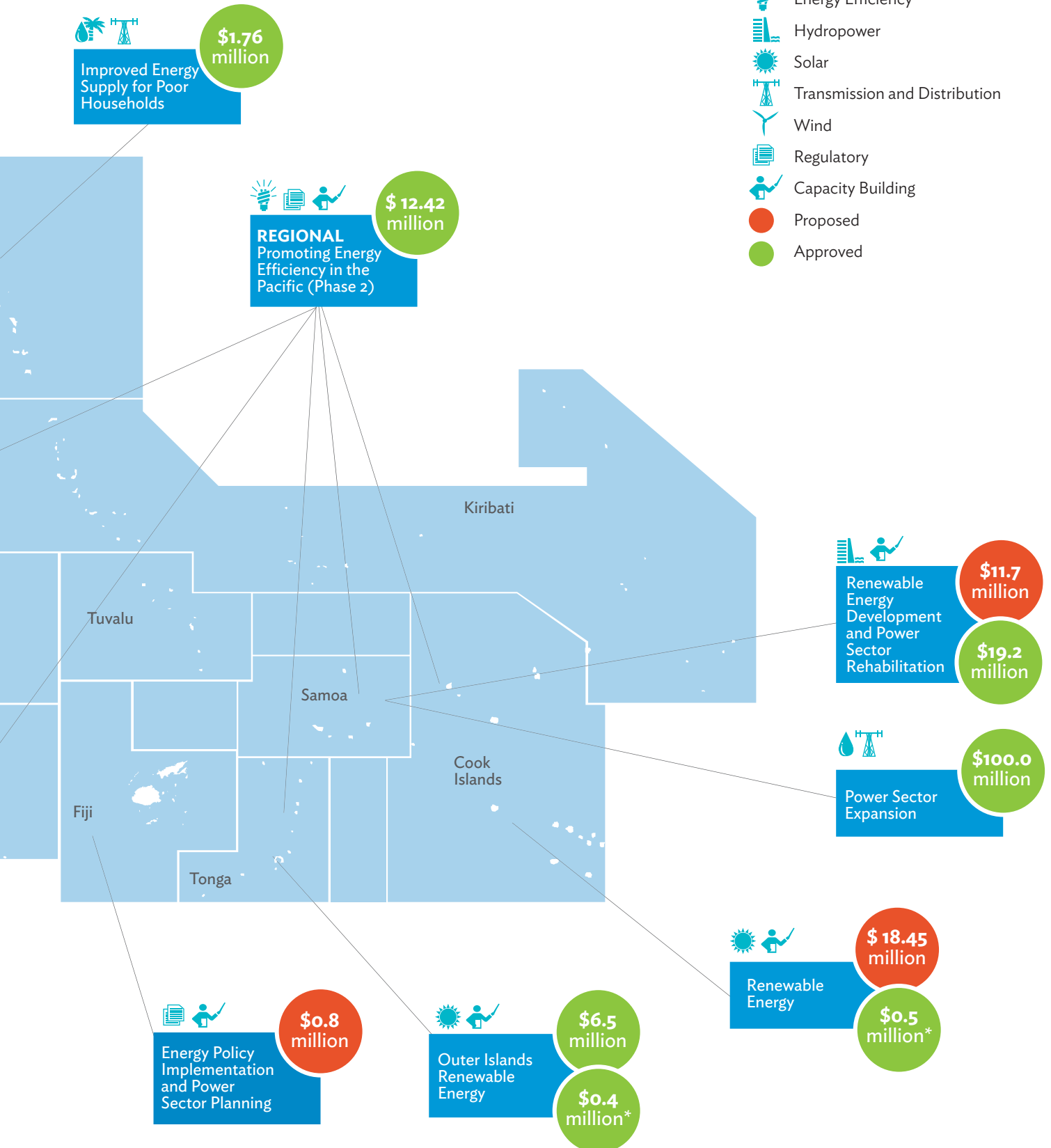
ADB Energy Projects in the Pacific



* Amount refers to the project preparatory technical assistance component.

Legend

-  Biofuel (Coconut)
-  Diesel Generation
-  Energy Efficiency
-  Hydropower
-  Solar
-  Transmission and Distribution
-  Wind
-  Regulatory
-  Capacity Building
- Proposed
- Approved



Regional Initiatives

TA No.	TA 7329-REG
Type	Regional—Capacity Development TA
Approval	August 2009
Completion	October 2014
Financing	
Amount (\$ million)	\$3.0
Sources	Multi-Donor Clean Energy Fund

Promoting Access to Renewable Energy in the Pacific

The technical assistance (TA) is promoting access to renewable energy in three Pacific DMCs—Papua New Guinea, Solomon Islands, and Vanuatu. The impact of the project will be to increase the use of sustainable, safe, reliable, affordable, and versatile renewable energy products. These results will contribute to reducing their dependence on fossil fuels and lowering greenhouse gas emissions.

The TA has supported the design of a cascade management plan for the Rouna Hydropower scheme in Papua New Guinea; the use of coconut oil blended with diesel to fuel a power plant located in Auki, Malaita Province in Solomon Islands; and a grid-connected solar photovoltaic pilot on Espiritu Santo in Vanuatu. It has also assisted an investigation of hydropower resources in provincial centers in Solomon Islands, and on the islands of Malekula and Espiritu Santo in Vanuatu. (See more developments in the respective Pacific DMCs in the succeeding sections.)

TA No.	TA 7798-REG
Type	Regional—Capacity Development TA
Approval	March 2011
Completion	March 2015
Financing	
Amount (\$ million)	\$12.42
Sources	Asian Clean Energy Fund, Australia, Global Environment Facility, ADB Technical Assistance Special Fund

Promoting Energy Efficiency in the Pacific (Phase 2)

Responding to the high priority to reducing reliance on fossil fuels of five Pacific DMCs—the Cook Islands, Papua New Guinea, Samoa, Tonga, and Vanuatu—ADB approved the TA for Promoting Energy Efficiency in the Pacific (PEEP) in September 2008. After Phase 1 of the program was completed in 2011, ADB implemented Phase 2 (PEEP2). (See more developments in the respective Pacific DMCs in the succeeding sections.)

PEEP2 is directed at energy efficiency measures in the five Pacific DMCs to reduce their energy consumption in the residential, commercial, and public sectors. It is also aimed at establishing policy and implementation frameworks toward reducing fossil fuel imports, achieving total energy savings, and reducing greenhouse gas emissions. PEEP2 is structured around four outputs:

- Stakeholder access to comprehensive information on energy use through the development of energy use database, which is now incorporated in the PEEP2 website (<http://www.ee-pacific.net>), maintained, and updated;
- Energy efficiency practices mainstreamed into government policies and procedures;
- Energy efficiency programs effectively and sustainably implemented, with tangible initiatives that include (i) upgrading street lighting using energy-efficient and long-life technologies; (ii) providing energy-efficient lighting systems to residential, commercial, and government buildings; (iii) undertaking energy audits in hotels, other nonresidential private buildings, and government buildings; and (iv) implementing improvements in air conditioning, lighting, refrigeration, water heating, and management schemes; and
- Information dissemination and improved public awareness undertaken through public education programs, workshops, media, innovative information and communication technologies, and knowledge products.

Cook Islands

Renewable Energy Sector

ADB has proposed the project for the Cook Islands to support the government in reducing the country's heavy reliance on imported fuel. Specifically, the project will increase power generation from renewable sources and enhance institutional capacity to implement the Cook Islands Renewable Energy Chart Implementation Plan (CIRECIP) 2012–2020. CIRECIP has set a target of supplying electricity from renewable energy on all inhabited islands by 2020. Results will be achieved through construction of new solar photovoltaic power plants with lithium-ion battery on up to six islands of the Southern Group, and institutional strengthening and project management support to implement the CIRECIP.

The project will consist of core subprojects on Mangaia, Mauke, and Mitiaro islands, totaling 0.78 megawatts (MW) of solar photovoltaic system. The European Commission will cofinance the development of these systems in the three islands through a grant of €5.30 million. The noncore subprojects will be undertaken on Aitutaki, Atiu, and Rarotonga islands, with a total capacity of up to 2.4 MW.

Another key output of the project will involve strengthening of institutional and project management to update the CIRECIP; develop demand-side energy efficiency implementation plan; enhance capacity of reducing emissions from deforestation and forest degradation (REDD) in renewable technology assessment; design and implementation of subprojects; and operation and maintenance.

Promoting Energy Efficiency in the Pacific (Phase 2)

The regional TA for PEEP2 is supporting energy-efficient street lighting in the Cook Islands. The installation of solar-powered light-emitting diode (LED) lighting commenced in May 2014 in the International Airport Car Park and in the Punanga Nui Market on Rarotonga. Use of energy-efficient lights is estimated to generate cost savings of \$9,800 and carbon dioxide (CO₂) emission reduction of 13.4 tons per year.

In May 2013, the Fridge-Freezer Replacement Program (FFRP) was launched to replace inefficient household refrigerator/freezer units with efficient fridges/freezers, reducing electricity consumption by approximately 20%–30% of each participating household. By completion of the FFRP in February 2014, 285 units were replaced and estimated to provide average cost savings of \$188 annually per consumer. These units were further expected to generate annual savings of 81,016 kilowatt-hours (kWh) in electricity, and reduce 63.1 tons of CO₂ emissions. Thus, the FFRP will enable households to realize considerable cost savings, benefiting them from higher disposable income. The performance of these replacement fridge/freezer units is currently being monitored to document their impact in terms of reduced energy consumption.

ADB supports investments in power transmission and distribution to expand service availability and improve system reliability

Loan/Grant	Proposed
Expected approval	2014
Financing	
Amount (\$ million)	\$18.45
Sources	ADB Ordinary Capital Resources (loan), European Union (grant)

TA No.	TA8439-COO
Type	Project Preparatory TA
Approval	September 2013
Financing	
Amount (\$ million)	\$0.50
Sources	Japan Fund for Poverty Reduction



ADB Photo

TA No.	Proposed
Type	Capacity Development TA
Expected approval	August 2014
Financing	
Amount (\$ million)	\$0.80
Sources	ADB Technical Assistance Special Fund

Energy Policy Implementation and Power Sector Planning

Fiji’s energy situation is characterized by high reliance on imported fuels, which is unlikely to change in the foreseeable future. Nonetheless, it is imperative—and there are other energy sources—for Fiji to lessen its reliance on imported fuels to the extent possible. Grid-based power supply has arguably the most potential to make Fiji’s energy sector more efficient, cost effective, and environmentally sustainable. Over 50% of Fiji’s electricity is generated from hydropower, but there are several medium-sized hydro sites that are undeveloped; and significant geothermal, solar, and wind resources that are unexplored. The majority of the population has access to modern forms of energy, brought by rural electrification initiatives since the late 1990s. However, about 10% of the population remains without access to electricity while remote areas and isolated islands are struggling to have sustainable access to electricity.

Fiji’s electricity system needs significant investment in the order of F\$1.5 billion through 2025. This cannot be financed by the public sector alone. As a matter of urgency, Fiji needs to attract private investment in generating capacity. To achieve this, Fiji has to overcome the lack of a clear regulatory framework for encouraging private generation, weaknesses in Fiji’s business climate, and dearth of publicly available data on renewable energy resources.

Fiji’s current institutional and policy framework for the energy sector is complex, with overlapping responsibilities and significant gaps in regulation and oversight. Responding to a request from the Government of Fiji for support, ADB is preparing a TA to evaluate the requirements of expanded regulatory functions of the Fiji Department of Energy covering the power sector. The department will assume the functions from the Fiji Electricity Authority. The TA will also assist in developing key aspects of an electrification master plan that will form the core strategy for prioritizing investments to finance the expansion of power service to unserved areas in Fiji.



ADB helps Pacific DMCs to develop and manage their hydroelectric potential—a valuable indigenous resource

Mike Trainor

Marshall Islands

Improved Energy Supply for Poor Households

The project expanded access to clean and affordable electricity for low-income households in the Marshall Islands. The project included three components:

- **Improved access and management of electricity for the poor.** A total of 350 prepayment meters were installed for residential customers of the Marshall Energy Company grid on the main island of Majuro and the outer islands of Jaluit and Wotje. Customers with prepayment meters now have greater flexibility in managing their use of power.
- **Extended and improved supply of power to low-income households.** Poor households without electricity service were connected to the power grid; and the power supply was improved to areas in Jaluit, Majuro, and Wotje.
- **Utilized local fuels in power generation to provide alternative incomes for the poor.** Coconut oil blended with diesel was used for Majuro power stations to reduce diesel consumption. Copra producers and their communities in the outer atolls earned additional income from this alternative fuel.

Grant No.	G9148-RMI
Approval	August 2010
Completion	January 2014
Financing	
Amount (\$ million)	\$1.76
Sources	Japan Fund for Poverty Reduction

Federated States of Micronesia

Strengthening the Energy Sector Regulatory Framework

The TA is strengthening the energy sector regulatory framework to create a better enabling environment for long-term investments in renewable energy, particularly in Chuuk and Pohnpei states. It is focused on how the regulatory framework could facilitate the integration of cost-effective renewable energy, and enable contracts with independent power producers (IPPs). The TA contributes to achieving the government's goal to generate 30% of electricity from renewable energy sources by 2020.

The expected outputs of this TA include the (i) development of options to improve the existing regulatory framework; (ii) development of options to increase investments in renewable energy under new regulatory models; and (iii) design of model contracts for power generation from IPPs.

In Chuuk State, the TA is establishing a framework that provides incentives to invest in expanding electricity access and evaluating the best approach for achieving the state's access expansion plans. For Pohnpei State, the TA is supporting the implementation of the new legal framework for contracting with IPPs, and building greater understanding of how to integrate cost-effective renewable energy to the network.

TA No.	TA 8230-FSM
Type	Policy and advisory TA
Approval	December 2012
Completion	August 2014
Financing	
Amount (\$ million)	\$0.50
Sources	ADB Technical Assistance Special Fund

Loan Nos.	L3004-FSM and L3005-FSM
Approval	June 2013
Completion	December 2017
Financing	
Amount (\$ million)	\$9.04
Sources	ADB Ordinary Capital Resources and Asian Development Fund

Yap Renewable Energy Development

The project is helping the government reduce the country's dependency on imported diesel by expanding renewable power generation and improving supply-side efficiency. Toward this end, the project will (i) develop grid-connected renewable power generation (1.5 MW wind and 0.3 MW solar) on Yap State; (ii) improve generation efficiency of diesel plant through a more efficient diesel generator; and (iii) build capacity within the Yap State Public Services Corporation through targeted training and development of required systems such as procurement, financial management, fiduciary controls, asset management, and system operation management. The project will convert 28% of power generation to renewable energy, and reduce diesel consumption for power generation by 32%.

Site preparation has been completed and tender documents for construction packages are being prepared.

Nauru

Grant	Proposed
Expected approval	2014
Financing	
Amount (\$ million)	\$5.00
Sources	ADB Asian Development Fund and European Union

Electricity Supply Security and Sustainability

The proposed project will improve the reliability of Nauru's electricity generation and reduce Nauru's cost of generation through lower fuel consumption. The project will fund the delivery and installation of new diesel-fired generation to provide reliable base-load power for Nauru Utilities Corporation (NUC), allowing it to retire older generation assets and perform scheduled refurbishment of existing units to extend their service lives.

The project will also include improvements to the existing structure housing NUC's generation units (the powerhouse) to reduce vulnerability to extreme weather events and flooding, as well as accommodate the installation of solar panels in the future.

TA No.	TA8524-NAU
Type	Project Preparatory TA
Approval	November 2013
Completion	June 2014
Financing	
Amount (\$ million)	\$0.50
Sources	ADB Technical Assistance Special Fund

Papua New Guinea

Town Electrification Investment Program—Tranche 1

The program—a multitranche financing facility for \$150 million—will help Papua New Guinea Power Limited (PPL) to improve power supply in provincial urban centers through the construction of small hydropower plants.

Under Tranche 1 of the facility, the following construction of plants is ongoing:

- **Divune Hydropower Plant.** 3 MW run-of-river hydropower plant, located in Popondetta, Northern Province;
- **Lake Hargy Interconnection.** 150 kilometers and 66 kilovolts transmission line, connecting Biella to Kimbe, West New Britain; and
- **Ramazon Hydropower Plant.** 3 MW run-of-river hydropower plant, located in the Autonomous Region of Bougainville.

Loan Nos.	L2713-PNG and L2714-PNG
Approval	December 2010
Completion	June 2016
Financing	
Amount (\$ million)	\$57.30
Sources	ADB Ordinary Capital Resources and Asian Development Fund

Improved Energy Access for Rural Communities

The project is increasing the distribution grids to rural communities in the Northern Province, West New Britain, and Autonomous Region of Bougainville. The grids will connect an estimated 4,500 households (1,500 households in each province), 20 schools, and 20 medical facilities in the rural communities in these three provinces.

The project is helping PPL to test implementation models such as community-based civil works contracts to lower the cost of implementation and increase community ownership. It is also building the capacity of the community to improve productive utilization of electricity.

Grant Nos.	G0288-PNG and G9163-PNG
Approval	April 2012
Completion	June 2015
Financing	
Amount (\$ million)	\$5.00
Sources	Japan Fund for Poverty Reduction and New Zealand

Port Moresby Power Grid Development

The project seeks to reduce fossil fuel consumption, increase access to electricity, and improve network reliability of the Port Moresby power grid. It will upgrade and extend transmission and distribution grids to improve the reliability and quality of power supply to the main urban center in Papua New Guinea. It will also improve the energy efficiency of power delivery and enable delivery of reliable power service to rapidly expanding areas of Port Moresby.

The project outputs include the (i) upgrade and rehabilitation of two hydropower plants (Rouna 1 and Sirinumu toe-of-dam), (ii) extension of the grid to approximately 3,000 additional households, (iii) strengthening of the transmission and distribution network, (iv) construction of a new substation (Kilakila), and (v) upgrade of existing substations.

Loan Nos.	L2998-PNG and L2999-PNG
Approval	April 2013
Completion	July 2017
Financing	
Amount (\$ million)	\$67.90
Sources	ADB Ordinary Capital Resources, Asian Development Fund and Technical Assistance Special Fund

TA No.	TA 8264-PNG
Type	Policy and advisory TA
Approval	December 2012
Completion	December 2015
Financing	
Amount (\$ million)	\$1.00
Sources	ADB Technical Assistance Special Fund

Implementation of the Electricity Industry Policy

The TA is supporting the Government of Papua New Guinea in implementing its Electricity Industry Policy aimed at improved quality and increased access to electricity services. The project provides assistance in preparing the national electrification roll-out plan, strengthening the capacity of the Energy Division of the Department of Petroleum and Energy to implement the plan, and identifying and implementing initial pilot projects.

In December 2013, the project and the World Bank held a week-long stakeholder workshop that presented policy options for selecting investments to achieve the government's ambitious energy access expansion targets through 2030.

Promoting Energy Efficiency in the Pacific (Phase 2)

PEEP2 is implementing three energy efficiency subprojects in Papua New Guinea:

- **Street-lighting in Alotau residential areas.** It involves replacing standard 80-watt mercury-vapor (MV) street lamps and other existing luminaires with high efficiency 30-watt LED luminaires. PPL will install 178 LED luminaires in Alotau, generating estimated annual energy cost savings of \$17,262 and reducing CO₂ emissions of 45 tons per year.
- **Lighting for Port Moresby General Hospital.** It involves replacing standard 36-watt T8 fluorescent tube lamps (FTLs) and electromagnetic ballasts together with existing twin tube non-reflective luminaires with 28-watt T5 FTLs, and electronic ballasts in highly reflective single tube luminaires. Estimated annual energy cost savings are placed at \$42,910 and CO₂ savings of 62 tons per year.
- **Lighting and ventilation at the University of Papua New Guinea.** It entails replacement of standard 36-watt T8 FTLs and electromagnetic ballasts together with existing twin tube non-reflective luminaires with 28-watt T5 FTLs and electronic ballasts in highly reflective single tube luminaires. The estimate of total annual cost of energy savings is \$44,060 while CO₂ savings per year are 41 tons.

Promoting Access to Renewable Energy in the Pacific

The TA project is supporting the design of a cascade management plan for the Rouna Hydropower Scheme that supplies the Port Moresby grid. Significant improvements in energy generation are anticipated from improved system management. The installation of gauging equipment and system modelling will be completed in 2014.



ADB Photo

ADB assists users to manage electricity consumption by installing prepaid electricity meters

Samoa

Renewable Energy Development and Power Sector Rehabilitation

The project will rehabilitate three small hydropower plants on Upolu Island that was damaged by Cyclone Evan in December 2012. Total installed capacity of 4.69 MW will be generated by the plants on Upolu Island, comprising the 1.74 MW Fale o le Fee plant, 1.05 MW Alaoa plant, and 1.9 MW Samasoni plant. Three new small hydropower plants will also be built with combined capacity of 0.81 MW, consisting of the 0.19 MW Faleaseela and 0.46 MW Tafitoala plants on Upolu and the 0.16 MW Faleata plant on Savai'i Island.

Samoa's power utility, Electric Power Corporation (EPC), will be assisted by the project to strengthen its capacity by improving asset management through a 2-year operation and maintenance knowledge transfer program.

The proposed expansion of the project will support the Government of Samoa to reduce the country's heavy reliance on imported fossil fuels and tap renewable sources for power generation. It is expected to result in greater energy security, and improve power sector resilience and sustainability for Samoa.

Power Sector Expansion

The project contributes to the government's objective of providing sustainable and reliable electricity services to all consumers at cost-efficient prices. Assistance is provided to improve the capacity of the power sector to meet growing electricity demand. It is also focused on improving the quality, reliability, and cost-effectiveness of power supply by enhancing the financial performance of EPC; and supporting its investment plan to meet increasing demand. The operational efficiency of EPC will be improved and an effective regulation of the power sector will be established.

The project is helping implement EPC's Investment Plan (2008–2015), which involves the development and rehabilitation of transmission and distribution lines; installation of prepayment meters; and construction and rehabilitation of power generation facilities. Civil works include construction of the Upolu diesel power station and Vaitai hydroelectric power plant, refurbishment of Alaoa hydropower station, and rehabilitation of the Tanugamanono diesel power station noise and emission control program.

To meet the demand on Upolu Island, the Fiaga Power Station, which houses the diesel generators, was opened in April 2013. Single and three-phase metering units were installed, with 80% of total active meters on prepayment, exceeding the project goal of 75%. The hospital feeder upgrade has also been completed.

Grant Nos.	G0370-SAM, G0371-SAM, and G0373-SAM
Approval	November 2013
Completion	June 2019
Financing	
Amount (\$ million)	\$19.21
Sources	ADB Asian Development Fund and Multi-Donor Clean Energy Fund

Loan/Grant	Proposed
Expected approval	2014
Financing	
Amount (\$ million)	\$11.70
Sources	European Union and New Zealand

Loan/Grant	L2368-SAM and G0087-SAM, G0101-SAM, L8232-SAM
Approval	November 2007
Completion	December 2016
Financing	
Amount (\$ million)	\$100.00
Sources	ADB Asian Development Fund, Australia, Electric Power Corporation, and Japan Bank for International Cooperation

Promoting Energy Efficiency in the Pacific (Phase 2)

PEEP2 provides energy-efficient air conditioning subprojects in Samoa:

- **Energy efficient air conditioning in hotels.** It involves the replacement of old inefficient air-conditioners with 24 inverter type air-conditioners of different sizes in Pacific Pearl and Vaisala hotels. The replacement will result to estimated savings of \$7,297 annually and 16 tons of CO₂ per year.
- **Demonstration of energy efficient air conditioning technologies.** It consists of replacing old inefficient energy air conditioners with 47 inverter type units and 11 solar type air conditioners, in six public buildings in Mapufagalele. These buildings include those for Little Sisters of the Poor, Ministry of Natural Resources and Environment, National Health Service, National University of Samoa, Samoa National Provident Fund Building, and Scientific Research Organization of Samoa. Estimated energy cost savings are \$35,787 per year and CO₂ savings of 77 tons per year.

Solomon Islands

Provincial Renewable Energy

Loan/Grant Nos.	Lo386-SOL and G3127-SOL
Approval	May 2014
Completion	September 2022
Financing	
Amount (\$ million)	\$12.00
Sources	ADB Asian Development Fund

The recently approved project, formerly entitled Outer Islands Renewable Energy, aims to increase the economic activities in Auki, Malaita Province through increased supply of more reliable and cleaner power. It provides financing for the construction of a 750-kilowatt run-of-river hydropower plant in Fiu River; this will completely displace diesel generation in Auki to increase renewable energy generation and energy access.

The project will assist the Solomon Islands Electricity Authority (SIEA) in installing hydropower generation to replace diesel generation in the third largest load center in Solomon Islands, and extend the distribution grid to peri-urban households. It will also expand the distribution grid, which will increase SIEA's customer base in Auki by 91%. To build the capacity of SIEA staff in the operation and maintenance of hydropower plants, they will participate in several training programs. Newly connected households will also be trained in income generation through electricity, electricity safety, and household budget management.

TA No.	TA8130-SOL
Type	Project Preparatory TA
Approval	August 2012
Completion	January 2014
Financing	
Amount (\$ million)	\$0.25
Sources	STCF

Renewable Energy Investment Plan

Through support from Scaling Up Renewable Energy in Low Income Countries Program, funded by the Strategic Climate Fund, ADB assisted the Department of Mines, Energy and Rural Electrification to draft the national renewable energy investment plan for Solomon Islands.

Tonga

Outer Island Renewable Energy

The project supports the government's objective to reduce the high cost of electricity in Tonga and its extreme vulnerability to oil price increases, due to the country's high dependence on imported diesel. Solar power systems with an overall distributed capacity of 1.25 megawatt-peak (MWp) on nine outer islands will be constructed and installed. Specifically, the project will:

- connect solar photovoltaic generators to existing electricity distribution networks (0.2 MWp on Eua, 0.4 MWp on Vava'u, and 0.2 MWp on Ha'apai); and community-owned and community-managed electrical minigrids on four Ha'apai outer islands (70 kilowatt-peak [kWp] on 'Uiha, 70 kWp on Nomuka, 70 kWp on Ha'ano, and 70 kWp on Ha'afeva);
- connect 0.15 MWp of solar power capacity to a newly installed distribution system in Niuatoputapu; and
- expand existing solar home system capacity in Niuafou'ou by installing additional 100 units of 200 watt-peak systems.

The project also assists in building the capacity of the Tonga Power Limited, in operating and maintaining renewable technologies.

Grant Nos.	G0347-TON and G0348-TON
Approval	June 2013
Completion	June 2020
Financing	
Amount (\$ million)	\$6.50
Sources	ADB Asian Development Fund and Australia

TA No.	TA8296-TON
Type	Project Preparatory TA
Approval	December 2012
Financing	
Amount (\$ million)	\$0.40
Sources	Clean Energy Fund

Promoting Energy Efficiency in the Pacific (Phase 2)

In Tonga, PEEP2 is implementing two residential energy efficient lighting programs to reduce household energy consumption. It is replacing current incandescent bulbs with compact fluorescent lamps (CFLs), as well as existing T8 FTLs with T5 FTLs. In the outer islands of 'Eua, Ha'apai, and Vava'u, the installation of 10,120 CFLs and FTLs will bring about annual energy cost savings of \$70,717 and CO₂ savings of 213 tons per year. In Tongatapu Island, the installation of T5 FTLs will generate energy cost savings estimated at \$75,560 annually, and savings of 136 tons of CO₂ per year.



Mike Trainor

ADB is working with Pacific DMCs to support critical maintenance of energy sector assets

Vanuatu

Energy Access

Loan/Grant	Proposed
Expected approval	2014
Financing	
Amount (\$ million)	\$10.00
Sources	ADB and others

TA No.	TA8285-VAN
Type	Project Preparatory TA
Approval	December 2012
Completion	June 2014
Financing	
Amount (\$ million)	\$0.75
Sources	ADB Technical Assistance Special Fund

The proposed project aims to increase energy access to households and businesses across Vanuatu. It is planned to expand the existing distribution grids and develop low-cost renewable energy generation from hydropower. Plans will also focus on increasing the supply of affordable grid-connected electricity to households in targeted provincial centers. The project will also provide support to the extension of electricity distribution grids, operation of two hydropower plants, capacity building for the implementing agency and project beneficiaries, and efficient project management services. Preparation of the proposed project is ongoing.

Promoting Access to Renewable Energy in the Pacific

The TA project supported prefeasibility studies for hydropower sites on the islands of Malekula and Espiritu Santo. The construction of a 40-kilowatt grid-connected solar photovoltaic pilot on Espiritu Santo was completed in 2013.

Promoting Energy Efficiency in the Pacific (Phase 2)

PEEP2 is supporting a residential energy-efficient lighting program in Lungaville, Espiritu Santo Island. It involves the replacement of existing incandescent lighting with CFLs, and T12 and T8 FTLs with T5 FTLs; and the installation of 3,800 CFLs and T5 FTLs. Energy savings are estimated amounting to \$63,165 yearly and 161 tons of CO₂ per year. Old inefficient lamps replaced will be disposed of using the bulb eater procured under the PEEP2 lamp waste management scheme.

In Port Vila, energy-efficient street lighting will replace 125-watt mercury-vapor (MV) lamps with 160 sets of 70-watt LED luminaires. The municipality will realize an estimated annual energy savings of \$8,400 (based on 6 hours of usage per night) and CO₂ of 24 tons.

ADB supports livelihood creation through access to electricity



ADB Photo

Pacific Energy Update 2014

The Asian Development Bank (ADB) is working to assist in the development of the energy sector in 14 Pacific developing member countries (DMCs) through technical assistance, loan, and grant financing. ADB provides support for the rehabilitation and expansion of power sector infrastructure, improvement of electricity access rates, expansion of renewable energy generation, and improvement of end-use efficiency. ADB is currently implementing energy projects in ten Pacific DMCs—the Cook Islands, Fiji, the Marshall Islands, the Federated States of Micronesia, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, and Vanuatu. This document provides an update of ongoing Pacific energy projects and proposed assistance for 2014.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to approximately two-thirds of the world's poor: 1.6 billion people who live on less than \$2 a day, with 733 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration. Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.



ASIAN DEVELOPMENT BANK

6 ADB Avenue, Mandaluyong City

1550 Metro Manila, Philippines

www.adb.org