Contents

2 ADB Energy Sector Projects in the Pacific Developing Member Countries
3 Map
4 Regional Initiatives
5 Cook Islands
7 Marshall Islands
8 Federated States of Micronesia
9 Nauru
10 Papua New Guinea
12 Samoa
14 Solomon Islands
15 Tonga
16 Vanuatu

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Note: In this publication, “$” refers to US dollars.

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Pacific developing member countries (DMCs) are highly dependent on imported fossil fuels for electricity generation. The high cost of imported fossil fuels puts a major strain on the resources of countries, jeopardizing their energy security, worsening their terms of trade, and impeding their economic growth and development. Tariffs in most Pacific DMCs are among the highest in the world (median residential tariffs in the region are around $0.40 per kilowatt-hour), while service quality, reliability, and access are poor. In several countries in the Pacific region, the proportion of households with access to electricity is extremely low—in some cases as low as 10%.

The Asian Development Bank (ADB) focuses on three strategic areas in the energy sector in Pacific DMCs: developing indigenous and renewable energy resources to reduce reliance on imported fossil fuels, improving the efficiency of electricity generation and end-use, and expanding access to electricity for households and small businesses. Accordingly, ADB’s activities in the Pacific DMCs include:

- **Supporting transition to renewable energy.** Countries can reduce their reliance on imported fossil fuels by generating power from renewable sources. This is particularly true in the Pacific region where cost-competitive renewable energy technologies are being implemented. ADB is piloting and upscaling technologies, such as small-scale hydropower, grid-connected solar power, indigenous biofuels, and wind power.

- **Supporting energy efficiency.** Improving the efficiency of energy use by customers offers significant potential for fuel savings. Through its flagship program, Promoting Energy Efficiency in the Pacific, ADB is providing support to a range of initiatives, including the adoption of Minimum Energy Performance Standards for appliances, raising public awareness, promoting energy-efficient lighting, and improving energy efficiency in buildings.

- **Rehabilitating existing infrastructure.** Major improvements to old and inefficient equipment can be undertaken to achieve supply-side efficiency at least cost. Examples include the replacement of inefficient generator sets, resizing of transformers, and retrofitting of overhead line conductors.

- **Improving access to electricity.** ADB is expanding electricity service to unserved areas and helping communities to use new sources of energy in their livelihood chores, facilitating learning in schools, and improving treatment in health-care facilities.

- **Developing the private sector.** Private sector involvement in the power industry in the Pacific region is important to help overcome the constraints faced by governments due to limited capital and technical capacity. ADB is helping to establish appropriate regulatory frameworks to foster private sector participation in the power industry, and increase government capacity in managing private sector contracts. ADB is also improving access to international carbon finance through the Kyoto Protocol’s Clean Development Mechanism (CDM).

Examples of these initiatives across the region are detailed in the following sections. This update is produced annually by ADB’s Pacific Department.
<table>
<thead>
<tr>
<th>Country</th>
<th>Project</th>
<th>Funding Source</th>
<th>Status</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional</strong></td>
<td>Promoting Access to Renewable Energy in the Pacific&lt;sup&gt;a&lt;/sup&gt;</td>
<td>ACEF&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Approved 2009</td>
<td>$3.00 million R-CDTA (3 Pacific DMCS)</td>
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<tr>
<td></td>
<td>Promoting Energy Efficiency in the Pacific (Phase 2)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>ACEF, Australia, GEF, TASF, Japan</td>
<td>Approved 2011</td>
<td>$12.42 million R-CDTA grant (5 Pacific DMCS)</td>
</tr>
<tr>
<td></td>
<td>Performance Benchmarking of Power Utilities Improving Access to Carbon Finance</td>
<td>Multiple Sources</td>
<td>Approved 2009</td>
<td>$0.30 million RETA</td>
</tr>
<tr>
<td><strong>Cook Islands</strong></td>
<td>Renewable Energy</td>
<td>ACEF, Australia, GEF, TASF</td>
<td>Approved 2011</td>
<td>$12.42 million R-CDTA grant (5 Pacific DMCS)</td>
</tr>
<tr>
<td><strong>Marshall Islands</strong></td>
<td>Improved Energy Supply for Poor Households</td>
<td>JFPR, ADF, OCR</td>
<td>Approved 2010</td>
<td>$1.76 million grant</td>
</tr>
<tr>
<td></td>
<td>Public Sector Program – Subprogram 1.&lt;sup&gt;e&lt;/sup&gt;</td>
<td>JFPR, ADF</td>
<td>Approved 2010</td>
<td>$9.50 million loan</td>
</tr>
<tr>
<td><strong>Micronesia, Federated States of</strong></td>
<td>Yap Renewable Energy Development Pohnpei Power Sector Development</td>
<td>ADF, OCR</td>
<td>Approved 2013</td>
<td>$9.04 million</td>
</tr>
<tr>
<td></td>
<td>Strengthening the Energy Sector Regulatory Framework</td>
<td>TASF</td>
<td>Approved 2012</td>
<td>$0.50 million proposed PATA grant</td>
</tr>
<tr>
<td><strong>Nauru</strong></td>
<td>Regulatory and Governance Reform for Improving Water and Electricity Supply in Nauru Nauru Energy Efficiency Support</td>
<td>TASF</td>
<td>Approved 2011</td>
<td>$0.20 million S-CDTA</td>
</tr>
<tr>
<td><strong>Papua New Guinea</strong></td>
<td>Town Electrification Investment Program</td>
<td>ADF, OCR</td>
<td>Approved 2010</td>
<td>$150.00 million MFF investment program Tranche 1: $57.30 million loan</td>
</tr>
<tr>
<td></td>
<td>Improved Energy Access for Rural Communities</td>
<td>JFPR, New Zealand</td>
<td>Approved 2012</td>
<td>$5.00 million grant</td>
</tr>
<tr>
<td></td>
<td>Promoting Energy Efficiency in the Pacific (Phase 2)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>ACEF, Australia, GEF, TASF, Japan</td>
<td>Approved 2011</td>
<td>$12.42 million R-CDTA grant (5 Pacific DMCS)</td>
</tr>
<tr>
<td></td>
<td>Port Moresby Power Grid Development</td>
<td>OCR, ADF, TASF</td>
<td>Approved 2013</td>
<td>$67.90 million proposed loan and grant&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Promoting Access to Renewable Energy in the Pacific&lt;sup&gt;c&lt;/sup&gt;</td>
<td>ACEF&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Approved 2009</td>
<td>$3.00 million R-CDTA (3 Pacific DMCS)</td>
</tr>
<tr>
<td></td>
<td>Implementation of the Electricity Industry Policy</td>
<td>TASF</td>
<td>Approved 2012</td>
<td>$1.00 million grant</td>
</tr>
<tr>
<td><strong>Samoa</strong></td>
<td>Power Sector Expansion Project</td>
<td>ADF, Australia, ADB, JBIC</td>
<td>Approved 2007</td>
<td>$100.00 million loan and grant</td>
</tr>
<tr>
<td></td>
<td>Implementing the Samoa National Energy Policy</td>
<td>Australia, Finland, JFPR</td>
<td>Approved 2008</td>
<td>$1.85 million ADTA</td>
</tr>
<tr>
<td></td>
<td>Preparing the Afulilo Environmental Enhancement Project</td>
<td>JSF</td>
<td>Approved 2008</td>
<td>$1.20 million PPTA</td>
</tr>
<tr>
<td></td>
<td>Promoting Energy Efficiency in the Pacific (Phase 2)&lt;sup&gt;c&lt;/sup&gt;</td>
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<td>Approved 2011</td>
<td>$12.42 million R-CDTA grant (5 Pacific DMCS)</td>
</tr>
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<td>Renewable Energy and Power Sector Rehabilitation</td>
<td>ADF</td>
<td>Approved 2013</td>
<td>$1.00 million</td>
</tr>
<tr>
<td><strong>Solomon Islands</strong></td>
<td>Promoting Access to Renewable Energy in the Pacific&lt;sup&gt;c&lt;/sup&gt;</td>
<td>ACEF&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Approved 2009</td>
<td>$3.00 million R-CDTA (3 Pacific DMCS)</td>
</tr>
<tr>
<td></td>
<td>Outer Island Renewable Energy Project</td>
<td>ADF, Others (TBD)</td>
<td>Proposed 2013</td>
<td>$8.00 million proposed loan and grant</td>
</tr>
<tr>
<td><strong>Tonga</strong></td>
<td>Promoting Energy Efficiency in the Pacific (Phase 2)&lt;sup&gt;c&lt;/sup&gt;</td>
<td>ACEF, Australia, GEF, TASF</td>
<td>Approved 2011</td>
<td>$12.42 million R-CDTA grant (5 Pacific DMCS)</td>
</tr>
<tr>
<td></td>
<td>Outer Island Renewable Energy Project</td>
<td>ADF, JFPR</td>
<td>Proposed 2012</td>
<td>$6.50 million proposed grant&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Outer Island Energy Efficiency Project</td>
<td>ADF, Others (TBD)</td>
<td>Proposed 2014</td>
<td>$5.00 million proposed grant&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Vanuatu</strong></td>
<td>Promoting Access to Renewable Energy in the Pacific&lt;sup&gt;c&lt;/sup&gt;</td>
<td>ACEF&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Approved 2009</td>
<td>$3.00 million R-CDTA (3 Pacific DMCS)</td>
</tr>
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<td></td>
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<td>ACEF, Australia, GEF, TASF</td>
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<td>$12.42 million R-CDTA grant (5 Pacific DMCS)</td>
</tr>
<tr>
<td></td>
<td>Energy Access Development</td>
<td>ADF, Others</td>
<td>Proposed 2014</td>
<td>$11.00 million proposed loan and grant</td>
</tr>
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</table>

ACF = Asian Clean Energy Fund, ADB = Asian Development Bank, ADF = Asian Development Fund, ADTA = advisory technical assistance, CDM = Clean Development Mechanism, CDA = capacity development technical assistance, CEF = Clean Energy Fund, DMC = developing member country, DNA = designated national authority, EPC = Electric Power Corporation, GEF = Global Environment Facility, JFPR = Japan Fund for Poverty Reduction, JBIC = Japan Bank for International Cooperation, JSF = Japan Special Fund, MFF = Multi-tranche financing facility, OCR = ordinary capital resources, O&M = operation and management, PPTA = project preparatory technical assistance, R = regional, RETA = regional technical assistance, S = small-scale, TASF = Technical Assistance Special Fund, TBD = to be determined.

<sup>a</sup> This project covers 3 Pacific DMCS: Papua New Guinea, Solomon Islands and Vanuatu.
<sup>b</sup> Clean Energy Fund is financed by the governments of Australia, Norway, Spain, and Sweden.
<sup>c</sup> This project covers 5 Pacific DMCS: Cook Islands, Papua New Guinea, Samoa, Tonga, and Vanuatu.
<sup>d</sup> Amount is indicative and includes the cost of project preparatory technical assistance. Additional cofinancing sources are still to be confirmed.
<sup>e</sup> Majority of the support was for Marshall’s Energy Company debt restructuring.
Shows the location of ADB Energy Projects in the Pacific.
Promoting Access to Renewable Energy in the Pacific

ADB is supporting the development of renewable energy resources in Papua New Guinea (PNG), Solomon Islands, and Vanuatu under this technical assistance program, drawing on financial resources amounting to $3.0 million that was made available through the Multi-Donor Clean Energy Fund under the Clean Energy Financing Partnership Facility. The program will advance the development of sustainable, safe, reliable, and affordable renewable energy resources in targeted countries, reducing their dependence on imported fossil fuels and lowering their emissions of greenhouse gases (GHG). More project implementation details by Pacific developing member countries (DMC) can be found in succeeding sections.

Promoting Energy Efficiency in the Pacific

Under this $12.4 million program, with support from the Global Environment Facility and the Government of Australia, ADB is assisting the governments of the Cook Islands, PNG, Samoa, Tonga, and Vanuatu in exploiting opportunities to improve supply-side and demand-side energy efficiency (i.e., investing in so-called “nega-watts”), in lieu of investments in often costlier supply expansions. Increasing the efficiency of energy delivery and use is a principal means of reducing both the cost and environmental impacts of energy consumption. Phase 1 of this program helped countries to identify feasible demand-side energy efficiency measures, and prepare projects for financing and implementation.

The current Phase 2 of this program expands ADB’s support to the five benefitting countries in their efforts to reduce their reliance on imported fossil fuels for power generation. Reduced energy intensity of these countries’ economies, brought about by improved energy efficiency, will enhance their energy security and deliver significant macroeconomic benefits. Phase 2 of the program is funded in partnership with the Australian Agency for International Development and the Global Environment Facility.

Details on specific activities in each benefitting Pacific DMCs can be found in succeeding sections.

Performance Benchmarking of Power Utilities

ADB supported the Pacific Infrastructure Advisor Center (PIAC) in the preparation of the Performance Benchmarking for Power Utilities Report, which was published in December 2011. The report is helping utilities in the Pacific to monitor, evaluate, and improve their performance by assessing technical and financial trends within the utility, and by comparing their performance with other similar utilities in the Pacific and elsewhere. There were 21 member utilities of the Pacific Power Association that participated in the benchmarking exercise, responding to data requests across a range of performance indicators relating
to service quality and reliability, work force productivity, and customer satisfaction, among others. To support future utility benchmarking, PIAC produced and released the *Power Benchmarking Manual* in September 2012. (PIAC operates under the Pacific Region Infrastructure Facility, a multipartner infrastructure coordination and financing mechanism for the Pacific region. The partners are ADB, the Australian Agency for International Development, the New Zealand Ministry of Foreign Affairs and Trade, the World Bank Group, the European Commission, and the European Investment Bank.)

**Improving Access to Carbon Finance**

A barrier to the development of renewable energy projects in the Pacific region has been the inability of ADB's DMCs to attract carbon financing for relatively small-scale projects with substantial (and proportionately high) transaction costs. To date, only two projects have been successfully registered for carbon credits under the Kyoto Protocol's Clean Development Mechanism (CDM). At the Conference of Parties 16 in Mexico in December 2010, the registration rules for projects in countries, with less than 10 registered CDM projects, were relaxed. To facilitate access to the CDM, ADB launched several initiatives to assist the Pacific DMCs to access international carbon markets.

Under the regional technical assistance project, Strengthening Climate Risk and Resilience Capacity of Pacific Developing Member Countries (Phase 1), and through bilateral programs, ADB is supporting the establishment of designated national authorities (DNAs) in Samoa, Solomon Islands, Timor-Leste, Tonga, and Vanuatu to allow them to access CDM financing. The assistance to the Pacific DMCs includes training and capacity building programs for the DNAs and their stakeholders, and the development of a clear and transparent legal and institutional framework for CDM-financed projects. Support is also being provided in preparing a CDM pipeline; and in promoting its benefits through the development of appropriate mitigation actions in countries, and drafting of relevant CDM documentation for projects.

In PNG, ADB is supporting projects to help access carbon financing. Support includes the preparation of project design documents for Ramazon and Divune hydropower projects, under the Town Electrification Investment Program in PNG; provision of access to the ADB Future Carbon Fund via a Certified Emission Reduction Purchase Agreement; and training for key stakeholders on CDM awareness.
Promoting Energy Efficiency in the Pacific

This regional technical assistance project (see Regional Initiatives on page 4) entered Phase 2 in November 2011, with the Cook Islands, together with Papua New Guinea, Samoa, Tonga, and Vanuatu, among the five Pacific DMCs benefitting from the program.

Under Phase 1 of the program, a study concluded that demand-side energy efficiency measures in the Cook Islands could lower total electricity consumption by 13% and peak demand by 0.9 megawatts (MW). Based on this assessment, the Cook Island’s power utility, Te Aponga Uira, distributed 18,000 compact fluorescent lamps to households throughout the islands. In Rarotonga, energy efficiency interventions reduced diesel consumption by an estimated 174,000 liters, lowering GHG emissions to approximately 450 tons of carbon dioxide equivalent per year and realizing savings of about $80 on a typical household’s electricity bill a year.

Under the current Phase 2, five further projects identified under Phase 1 have been approved in the Cook Islands, with a combined value of approximately $420,000. These projects support the introduction of solar-powered street lighting; and the implementation of energy efficiency measures in public buildings, and a market-driven program to accelerate the replacement of old, inefficient household refrigerators and freezers with newer, energy-efficient models. The refrigerator replacement program will enlist the participation of retailers in the marketing of high-efficiency models directly to households. With 40% of households’ electricity consumption attributable to refrigeration needs, an average participating household is expected to save an estimated $250 per year.

Renewable Energy

ADB is preparing a project to assist the Cook Islands to reduce the country’s heavy reliance on imported fossil fuels for power generation. In mid-2013, ADB plans to commence an assessment of the technical and financial feasibility for the proposed installation of approximately 6 MW of solar-powered generation. In addition to financing the procurement and installation of this new, renewable source of generation, the project would also develop the capacity of the utility staff of the Cook Islands on operation and integration of solar photovoltaic sources with the existing grid-connected generation. ADB initial estimates indicate that at least 8.6 gigawatt-hours of power can be generated each year from the proposed solar arrays, with concomitant GHG emissions reductions of approximately 8.2 tons of carbon dioxide equivalent per year.

Country Website

www.adb.org/CookIslands
ADB’s projects in the Marshall Islands have expanded electricity service to new households and businesses while helping them effectively manage their energy budgets.

**Improved Energy Supply for Poor Households**

With grant funding of $1.76 million provided through the Japan Fund for Poverty Reduction, this ADB-administered program seeks to improve the livelihoods of poor households in the Marshall Islands. It provides them access to sustainable electricity supply and through better delivery of electricity services. The scope of the project encompasses the following:

- **Prepayment meters installation.** A total of 350 prepayment meters have been installed in the residences of low-income customers in Majuro, the main atoll. The Marshalls Energy Company (MEC) identified 240 households whose services were disconnected due to payment arrears. These customers have been reconnected, and are now able to control their expenditure in real time with the use of prepayment meters. A further 110 meters were installed in households and small businesses that now enjoy electricity service for the first time.

- **Distribution grid rehabilitation and extension.** The distribution grid was extended to reach poor households that had never received electricity service. Cost savings at implementation allowed funds originally allocated for the extension of distribution grid to be reprogrammed to supplement the coconut oil (CNO) diesel replacement component.

- **Coconut oil diesel replacement.** Under this component, ADB supported the rehabilitation of a diesel-fired generator that feeds the network in Majuro. The rehabilitation included the acquisition of a CNO conditioning system, which allowed MEC to blend diesel with CNO and fuel the rehabilitated generator. ADB assisted MEC in establishing a CNO supply contract with the Tobolar Copra Processing Plant. Introduction of CNO to the fuel mix enhances the country’s energy security by reducing the quantity of imported fuel needed to generate electricity. It also has direct poverty alleviation impact, as it creates additional market for CNO and increases the demand for copra, benefiting the poorer populations in the Marshall Islands’ outer atolls where copra production is a major source of income.

**Public Sector Program**

The program was approved in 2010 and funded by a $9.5 million concessional loan from ADB’s Asian Development Fund. The program supports the Comprehensive Recovery Plan for MEC, through the restructuring of its debt. The Government of the Marshall Islands on-lent the funds to MEC, allowing the company to repay a high-interest loan it held with a commercial bank. The resulting interest-cost savings allowed MEC to invest in generator refurbishment that has yielded 14% reduction in fuel consumption.

**Country Website**

www.adb.org/MarshallIslands
Yap Renewable Energy Development

The project will support the development of the power system in the State of Yap to reduce dependency on imported diesel. This will be achieved through the expansion of renewable power generation (1.4 MW wind and 0.3 MW solar), and improvement of supply-side efficiency of power delivery through additional diesel generation. The project is expected to convert 22% of power generation in Yap State to renewable sources. The total project financing is estimated at $11.2 million, including $2 million contribution from the Government of Yap State.

Proposed Pohnpei Power Sector Development

ADB is studying the feasibility of a project for the rehabilitation of Pohnpei State power system, including the improvement of the efficiency of diesel generation, upgrading of the distribution network, and provision of support for tariff reform. Through improved generation and network efficiency, it is estimated that Pohnpei State could reduce diesel consumption by approximately 20%. The project will also support capacity building of the Pohnpei Utility Corporation. The project is scheduled for ADB Board approval in 2014, with an estimated project value of $14.0 million.

Strengthening the Energy Sector Regulatory Framework

Under this $0.5 million capacity-development technical assistance project, ADB will support the implementation of key reforms identified under the draft National Energy Policy of the Federated States of Micronesia. The TA will also help the national government, states, and utilities to identify and implement sector and tariff reforms. These reforms should help bolster the financial sustainability of the power sector and stimulate investment in renewable generation in support of the national target of achieving 30% generation from renewable sources by 2020.

Country Website

www.adb.org/Micronesia
Regulatory and Governance Reform for Improving Water and Electricity Supply in Nauru

One of the key components of Nauru’s national development agenda is the restructuring of the utilities sector, particularly the provision of electricity service by the former Nauru Phosphate Company and now by the Nauru Utilities Authority (NUA), an unincorporated government entity. The reform of utilities is part of the government’s effort to restore the country’s economic security, as guided by the Nauru National Sustainable Development Strategy 2005–2020. The strategy identifies the corporatization of utilities as a key economic priority, and the government has requested assistance from ADB for the corporatization and commercialization of NUA.

This $0.2 million technical assistance project is assisting the establishment of NUA as a separate legal entity with its own accounts and balance sheets, corporate strategy and development plan, and performance management system.

Nauru Energy Efficiency Support

Nauru is almost completely reliant on imported fossil fuels for power generation. Most of Nauru’s existing generation fleet is aged, inefficient, and unreliable. Meanwhile, there is abundant anecdotal evidence of inefficient end-use of electricity, attributable in large part to residential power tariffs that are far below cost of service. ADB is currently holding dialogue with Nauru stakeholders on options for supporting both supply-side and demand-side efficiency measures. Implementing these measures can lower the cost of generation and supply to end users, while reducing overall demand through end-use energy conservation measures.

Country Website

www.adb.org/Nauru
An ADB grant will finance the connection of households, schools, and medical clinics in rural communities to the power distribution grid which will be extended by PNG Power to rural communities.

**Town Electrification Investment Program**

The program is a $150 million multitranche financing facility (MFF) to help PNG Power Limited (PPL) to improve power delivery in provincial centers. The first tranche of the MFF was approved in 2010 for $71.6 million; and it has commenced implementation for the construction of
- Divune Hydropower Plant (approximately 3 MW run-of-river) in the Northern Province;
- Ramazon Hydropower Plant (approximately 4 MW run-of-river) in the Autonomous Region of Bougainville; and
- Kimbe–Bialla Interconnection, consisting of a 150-kilometer, 66-kilovolt transmission line connecting Bialla to Kimbe, West New Britain; including access to 1 MW spare generation from Lake Hargy Hydropower Plant; and connecting biomass power (methane recovery) from palm oil plantations along the alignment.

**Port Moresby Power Grid Development**

The project will support PPL to upgrade the transmission and distribution grids in the national capital, Port Moresby, thereby improving the reliability and quality of power supply to the main urban center in PNG. The project will also aim at improving the energy efficiency of power delivery; and enabling the availability of power service to the rapidly expanding areas of Port Moresby, boosting electricity access rates in the capital to 74% and extending the city's power grid to 3,000 unserved low-income households. The program was approved by the ADB Board in April 2013, for $83 million.

**Improved Energy Access for Rural Communities**

The grant will finance the extension of PPL's distribution network, enabling the households, schools, and medical clinics in rural communities to have access to new services. The project targets 4,500 households, 20 schools, and 20 clinics connected to the grid by 2014. The project will also assist PPL to upscale the trials of community-based civil works contracts for distribution powerline construction. The grant was approved in April 2012, and cofinanced, in the amount of $5 million, by the Japan Fund for Poverty Reduction and the Government of New Zealand.
Promoting Energy Efficiency in the Pacific

Under Phase 1 of this $1.4 million regional technical assistance project, ADB supported a pilot Power Factor Correction (PFC) initiative in Port Moresby. PFC improved network stability and power quality, and it reduced network losses by approximately 180 megawatt-hours (MWh) per year.

Phase 2 is further supporting the collection of data on power use that will inform future policy decisions and actions to foster energy efficiency. The program is also sponsoring a review of national building codes and technical standards for household appliances to make regulation “energy-efficiency-friendly.”

The implementation team is also working closely with PPL to roll out energy efficiency measures. To date, two projects have been identified for implementation in 2013–2014. Under the first project, the PPL office will become a model for efficient lighting through the conversion of existing lighting to high-efficiency lighting, and the installation of automatic switches that turn off lighting in unoccupied spaces. Under the second project, PPL will substitute street lighting of some residential areas of Port Moresby with more efficient lighting. For a total cost of $114,000, the project aims to install a total of 160 light emitting diode lighting units in place of currently installed mercury-vapor street lights, for total savings of approximately $35,000 per year.

Promoting Access to Renewable Energy in the Pacific

The project is helping PPL to prepare the Rouna hydropower cascade development plan, as well as build the capacity of the power utility on system management and maintenance. The project was approved in 2009 for $3 million and is being implemented in PNG, Solomon Islands, and Vanuatu.

Implementation of the Electricity Industry Policy

ADB approved the technical assistance project for $1 million, in late 2012, to support the implementation of the newly adopted Electric Industry Policy. The project further supports the development of an electrification roll-out plan and capacity within the Energy Division of the Department of Petroleum and Energy, and implementation of pilot projects aimed at expanding service to unserved communities.

Country Website

www.adb.org/PapuaNewGuinea
Power Sector Expansion

This investment project, costing $100 million, is supporting the Electric Power Corporation (EPC) to develop Samoa’s power sector. The project has 29 subprojects that include upgrade of transmission and distribution lines, construction and rehabilitation of diesel power plant, assessment and development of hydropower resources, installation of prepayment meters, and implementation of management measures on the demand side. It also includes a trial loan buy-down and grant-conversion mechanism, in which approximately $4.0 million of the loan proceeds will be converted to grant if implementation targets are met.

Fiaga Power Station, the largest component under this project, was officially opened on 25 April 2013 and it will house four brand new 5.7 MW diesel generators sufficient to completely satisfy the demand on Upolu Island. This project is funded by ADB from its Asian Development Fund and cofinanced by the Government of Australia and the Japan International Cooperation Agency.

Implementing the Samoa National Energy Policy

This $1.85-million technical assistance project is helping the Government of Samoa in the following areas:
- establishment of the power sector regulator (the structure and the office of the regulator), including the revision of the Electricity Act and Regulations and preparation of operating manuals;
- development of a Clean Energy Fund, including the operational framework and initial project pipeline, and provision of seed capital;
- establishment of a designated national authority to allow Samoa to access capital through the Kyoto Protocol’s CDM; and
- provision of resident financial advisors to EPC to support the implementation of its reform agenda.

Afulilo Environmental Enhancement

This $1.2 million technical assistance project is assisting EPC to complete due diligence for the preparation of the proposed Afulilo hydropower plant. The
project will, among others, assess the environmental and social impacts of what is envisaged to be Samoa’s first storage hydropower plant, and identify options for generation capacity augmentation. Technical evaluation of the proposed project has been completed.

**Promoting Energy Efficiency in the Pacific**

Under Phase 1 of this regional technical assistance program, the Government of Samoa received support for its demand-side energy efficiency activities. The program identified energy efficiency measures that could reduce total electricity consumption by 9% and peak demand by 1.6 MW. It also supported EPC in implementing a pilot Power Factor Correction initiative in Apia to improve network stability and power quality, reducing energy losses by 35 MWh.

Phase 2 of the program is continuing support to the government in expanding the collection of data on power use, and in implementing policies to foster energy efficiency. In Samoa, a project for the expansion of street lighting in Apia, and another project for retrofitting of government buildings with energy-efficient lighting, are currently under evaluation.

**Renewable Energy and Power Sector Rehabilitation**

This proposed project would assist the government’s efforts to reduce the country’s heavy reliance on imported fossil fuels for power generation, providing a secure, sustainable, and environmentally sound source of electricity for consumers. The project would implement a package of small hydropower equipment and works on Upolu and Savai’i islands. The package will consist of new grid-connected power generation capacity of approximately 2.5 MW, producing an additional estimated 10,047 MWh of electricity per year. The project would also conduct rehabilitation of power distribution assets damaged by cyclone Evan in December 2012. The project could help EPC save 500,000 liters of diesel every year, with corresponding annual GHG emissions reductions of at least 1,000 tons of carbon dioxide equivalent per year.

**Country Website**

www.adb.org/Samoa
Promoting Access to Renewable Energy in the Pacific

Less than 20% of all households in Solomon Islands have access to electricity. Power generation is restricted largely to urban centers, and relies almost exclusively on the import of costly diesel fuel. As a result, electricity tariffs in Solomon Islands are among the highest in the Pacific region. These issues are being addressed under this regional technical assistance project, with ADB providing $3 million to support the Government of Solomon Islands in increasing access to sources of renewable energy.

ADB also supported the Solomon Islands Electricity Authority (SIEA) in piloting the use of coconut oil (CNO) blended with diesel to fuel a generator in Auki, Malaita Province. The project also scoped potential hydropower sites in the outer islands and supported the SIEA and the government in conducting a pre-assessment of the sites’ potential, and collected data for five potential hydropower sites.

Outer Island Renewable Energy

This proposed project, a mix of loan and grant scheduled for ADB Board consideration in 2013, will finance hydropower investment projects selected from those identified under the regional technical assistance for Promoting Access to Renewable Energy in the Pacific. Five potential hydropower sites in the outer islands have been identified. Preliminary studies show that developing these hydropower sites, together with the corresponding distribution grid expansion, could increase access to electricity by households from 3% to 8% in Malaita, 3% to 18% in Temotu, 17% to 27% in Western Province, and 2% to 12% in Choiseul. During the preparation of the proposed investment project, sites will be screened and prioritized based on land availability, technical and financial viability, and social and economic impacts.

Country Website

www.adb.org/SolomonIslands
Promoting Energy Efficiency in the Pacific (Phase 2) supported Tonga Power in purchasing and installing 109 light-emitting diode street lights along Vuna Road in the capital, Nuku’alofa. These street lights will reduce energy consumption by 35% and save $12,000 per year in fuel costs.

Outer Island Renewable Energy

The proposed project, scheduled for ADB Board consideration in June 2013, will support the government’s efforts to reduce Tonga’s heavy reliance on imported fossil fuels for power generation. By providing secure, sustainable, and environmentally sound clean electricity and optimizing existing systems, the project can exert downward pressure on tariffs for private and commercial consumers. This will be achieved by connecting a total of 1.25 megawatt-peak (MWp) of distributed solar photovoltaic generators to the existing distribution networks.

The project will finance the construction and installation of a total of 1.25 MWp of grid-integrated solar arrays on nine Tongan outer islands, as well as the installation of 100 solar home systems with 200-watt capacities. In addition, technical assistance and training will be delivered to Tongan counterparts on the operation and maintenance of the solar power systems, including the placement of expert project management consultants for a 5-year period to guarantee project sustainability. Further advisory and consulting support to the government is also envisaged for the implementation of the Tonga Energy Road Map 2010–2020, a central government policy document for the sector’s development.

Promoting Energy Efficiency in the Pacific

Under Phase 1 of this regional technical assistance program, with funding of $1.4 million, the Government of Tonga received support for its demand-side energy efficiency activities. The program identified energy efficiency measures that could reduce total electricity consumption by 12% and peak demand by 1.3 MW. The program supported Tonga Power in purchasing and installing 109 light-emitting diode (LED) street lights along Vuna Road in the capital, Nuku’alofa. These street lights will reduce energy consumption by 35% and save $12,000 yearly in fuel costs.

The current Phase 2 of the program is further supporting to roll out street lighting in Tongatapu, and in the outer islands of Vava’u, Ha’apai, and ‘Eua. Using part of a $2.3 million budget earmarked for implementing energy efficiency measures in the five participating Pacific DMCs, the program aims to replace 135 lamps in Tongatapu and 179 in the outer islands with LED lamps. For a cost of less than $200,000, the program will reduce electricity consumption by approximately 100,000 kilowatt-hours per year.

Country Website

www.adb.org/Tonga
Vanuatu

Promoting Access to Renewable Energy in the Pacific

ADB is helping the Government of Vanuatu in addressing issues relating to low rates of electricity access by households, and the high reliance on imported diesel for power generation. Under this regional technical assistance, ADB is supporting the construction of pilot grid-connected solar photovoltaic (PV) generation on the island of Espiritu Santo. Separate solar PV arrays totaling 40 kilowatts in capacity will be installed on public buildings in Luganville, which include College de Santo, Luganville District Hospital, and the Sanma provincial government building. The project will build capacity in the construction and operation of renewable energy technologies, and resolve technical issues relating to their integration with small power grids.

A pre-feasibility study of hydropower resources in the outer islands identified two hydropower sites: Brenwe River on Malekula, and Wambu River on Espiritu Santo. ADB is currently conducting technical and financial assessments of the two sites, installing rain and flow measurement gauges to determine the options and feasibility of the sites for installation of the envisaged hydropower generation facilities. The collection of hydrological data is the first step to thoroughly understand the technical and financial potential of the two sites. The completion of full-scale feasibility studies is anticipated by mid-2014, with implementation of selected options to follow shortly thereafter.

Promoting Energy Efficiency in the Pacific

Phase 1 of this technical assistance program identified energy efficiency measures that could reduce total electricity consumption by 10% and peak demand by 1.3 MW. The program supported the establishment of a training program on energy efficiency and energy audit at the Vanuatu Institute of Technology, and carried out energy audits for major energy consumers in the hotel sector. A pilot energy efficiency project was conducted in one hotel, consisting of the retrofitting of the hotel’s building with solar water heaters, key switches, lighting and cooling optimization; and improvements in water management systems. According to the hotel owner, these measures considerably decreased the hotel’s electricity consumption.

Phase 2 of the program supported the development of the Vanuatu Energy Roadmap by suggesting options to incorporate energy efficiency in this key policy document. In addition, Phase 2 earmarked $2.3 million for the implementation of energy conservation measures. Two pilot projects were approved in April 2013, and are now in the implementation pipeline. The first project is piloting the use of energy-efficient air conditioning in government office facilities. The second project proposes the retrofitting of six government buildings, including the Vanuatu Parliament, with energy-efficient lighting. This project will replace over 2,000 lamps with energy-efficient, cost-effective alternatives. The two projects are estimated to save more than 141 MWh each year, worth about $97,000 at current Vanuatu electricity prices.

Country Website

www.adb.org/Vanuatu

ADB is currently studying the feasibility of developing new hydropower resources in Vanuatu.
Pacific Energy Update 2013

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 is providing 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 nine Pacific DMCs—the Cook Islands, the Marshall Islands, the Federated States of Micronesia, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, and Vanuatu. This document provides an update of the existing portfolio of Pacific energy projects for 2013, and a summary of 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 two-thirds of the world’s poor: 1.7 billion people who live on less than $2 a day, with 828 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.