

Meralco Rural Electrification Project

Date of Report: June 2002
Date of Survey: June 2001

1. Project Profile and Japan's ODA Loan



Location Map of the Project



A Electrified Household in Rizal Province

1.1 Background

At the time of appraisal, the Philippines' electric power sector was dominated by two corporations, the public National Power Corporation (NPC) and the private Manila Electric Company (Meralco). Meralco – an implementing agency of this project and the largest distribution company in the country -- covered Metro Manila and the surrounding 5 provinces. The NPC - the biggest electricity entity in the country – generated electricity with its own power plant^{*1} and purchased additional electricity from IPPs. NPC then sold electricity through its own transmission facilities at wholesale price to Meralco, other distribution companies, Rural Electric Cooperative^{*2} (REC), and bulk consumers.

The electrification ratio in the Meralco's franchise area was 93.2% in 1989, which meant 2.17 million households out of 2.33 million households were electrified. 61% of total households in the area live on Metro Manila, which shared only 7.2% of the total land area. In the area outside of Metro Manila, the number of electrified households was less than 200 per km², which is one-tenth of that of Metro Manila. The lower household density in rural area and consequently high construction costs for electrification were impeding investment in rural areas, resulting in a low electrification ratio in the rural areas. Therefore, a comprehensive project that would raise the electrification ratio became necessary since electrification was one factor contributing to and improve living standards in the rural areas.

1.2 Objectives

To provide electricity to rural areas within Meralco's franchise area, wherever access to electricity service is either limited or non-existent, and thereby improve the living standard of the residents and contribute to rural development.

1.3 Project Scope

Meralco Rural Electrification Project ("the Project") comprised of following 2 components:

a) Distribution Facilities

Installation of major/minor distribution network equipment in 5 provinces surrounding Metropolitan

¹ At the time, NPC possessed 94% of all generating facilities in the country.

² Rural Electrification Corporation (REC) – is managed by the local self-governing body and is in charge of executing rural electrification except Meralco's franchise area under supervision of the National Electrification Administration.

Manila (Quezon, Laguna, Rizal, Cavite, and Bulacan)

b) House Wiring

Installation of wiring facilities in approximately 100,000 houses in the project area

Total project cost was 11,044 million yen equivalent, with 75% of the total project cost (8,283 million yen equivalent) being covered by the Japanese ODA loan.

1.4 Borrower/ Executing Agency/ Implementing Agency

The Government of the Republic of the Philippines/
Philippine National Bank / Manila Electric Company (Meralco) *3

1.5 Outline of Loan Agreement

Loan Amount	8,283 million yen
Loan Disbursed Amount	7,414 million yen
Exchange of Notes	March 1991
Loan Agreement	July 1991
Terms and Conditions	
Interest Rate	2.7 % p.a.
Repayment Period (Grace Period)	30 years (10 years)
Procurement	General Untied
Final Disbursement Date	October 1999

2. Results and Evaluation

2.1 Relevance

The Project was planned to be implemented in accordance with the Meralco's Rural Electrification Project (REP). At the time of appraisal, the Philippine Government's Medium Term National Development Plan (1987-1992) placed great importance on poverty reduction in rural areas. In line with this plan, the Depressed Area Electrification Project (DAEP) in Metro Manila and the Rural Electrification Project (REP) were carried out by Meralco, the RECs and other public utilities (PUs) under the supervision of the National Electrification Administration (NEA). However, the two projects incurred higher expenses per consumer because of the low population density, as well as the remoteness of consumers from the grid. In addition, a higher distribution loss and a low tariff collection ratio were also obstacles to execution of these projects. Thus, although the Government and Meralco recognized the importance of the project as a measure for improving the living environment of the affected population, these projects were at a standstill. Consequently, there was demonstrated need for the Project and it was naturally consistent with Philippines' National Development Plan at that time.

At present, and in accordance with the rural electrification program, named the O-Ilaw Program *4, the NEA aims to enhance the quality of life of the population, especially those in the rural areas, by providing adequate and sustainable energy services. The O-Ilaw Program aims to complete the electrification of all barangays (villages) by 2006. It can therefore be said that the Project objective has been and still is relevant to the Development Policy of the Philippines.

Table-1: O-Ilaw Program Targets

	Barangays					Connections (1,000)				
	RECs	Meralco	Other PUs	Total	In %	RECs	Meralco	Other PUs	Total	In %
2000	27,737	4,172	1,458	33,367	79.6	5,403	3,382	994	9,748	78.7
2006	36,108	4,352	1,565	41,935	100.0	7,836	4,088	1,511	13,077	93.7

Source: Department of Energy

³ Since Meralco could not satisfy necessary conditions as an executing agency, the Philippine National Bank was mandated as an executing agency for sake of convenience, with consent of the Ministry of Finance of the Philippines and National Electrification Authority (NEA). The Project was practically implemented by Meralco, under the supervision of the NEA.

⁴ O-Ilaw: "O" stands for operation, and "Ilaw" means light in Tagalog

2.2 Efficiency

2.2.1 Project Scope

At appraisal, 106,213 households were supposed to be electrified. In reality, the number of electrified households increased by 83,354, reaching 189,567. This increase led to a corresponding increase in procured materials, such as poles, secondary transformers, transmission lines, service drops and electrical meters. These scope modifications contributed effectively to achieving the Project objectives.

The scope was modified mainly because Batangas Province was added to the Meralco franchise area in 1991, increasing the number of target households^{*5}.

2.2.2 Implementation Schedule

Project implementation started in July 1991, on schedule as estimated at appraisal, but was completed in October 1999, 37 months behind schedule. This delay was attributed mainly to an increase in the scope of the work. The increase in the target number of households led to procedural delays related to the acquisition of rights of way and to dealings with local organizations (community groups) at each barangay.

Coordination with local organizations and the acquisition of rights of way for distribution facilities are required prior to the application for Meralco's electrification works. These pre-application activities were carried out by the applicants through the barangay captain, with the supervision of Meralco's staff. Other delays, in design, construction and installation, originated from the scope expansion, but were minimized to some extent by entrusting non-core work to local contractors. Nevertheless, it was not possible to contract out support for the above-mentioned pre-application activities, which led to a critical shortage of the Meralco staff who were available to manage these issues.

2.2.3 Project Cost

The total project cost increased in line with the scope modifications. The actual project cost of 12,722 million yen equivalent was 15.2% higher than the 11,044 million yen equivalent of the appraisal estimate. When taking the 64% increase in the number of beneficiaries into account, it can be said that project objective was achieved efficiently in economic terms.

The ODA loan portion disbursed was 7,414 million yen equivalent, which covered 58.3% of the total project cost. The actual disbursement was 869 million yen lower than the approved amount of 8,283 million yen. Although JBIC consented to an extension of loan validity for 2 years in order to adjust for the delay in progress, 10.5% of the approved amount was not utilized within the loan validity period. In the end, balance cost was disbursed from Meralco's own funds.

2.3 Effectiveness

2.3.1 Contribution to a Higher Electrification Ratio

Under the Project, 189,567 households in six provinces were successfully electrified. Although the target area was difficult to energize owing to the low density of households and the distance of housing units from Meralco's grid system, the beneficiary households accounted for 11.25% of the total number of electrified households in the target provinces. In the case of Quezon Province, the electrification ratio in 1991 was 61.0%, which was the lowest ratio among the 6 provinces. Even with the lowest density among the target provinces, the beneficiary households made up as much as 32.7% of the total electrified households in the province.

⁵ In addition, there was an increase in the ability to purchase local currency accrued from the revaluation of Japanese Yen vis-à-vis US dollar and the depreciation of Philippine peso

Table-2: Number of Electrified Households and Project's Contribution (Unit: 1,000 households)

	1988	1991	1994	1997	2000 ^{*A}	Project's Outcome ^{*B}	Contribution Ratio (B/A)
Metro Manila	1,192.2	1,481.9	1,715.3	1,983.2	2,206.5	0.00	0.00%
Rizal	112.8	169.9	209.1	240.1	312.6	48.97	15.67%
Bulacan	197.1	271.6	319.8	368.5	415.3	38.37	9.24%
Laguna	162.1	218.3	265.7	309.2	351.0	19.19	5.47%
Quezon	80.4	83.0	105.6	127.4	150.8	49.33	32.71%
Cavite	146.1	207.1	271.9	333.7	385.9	27.35	7.09%
Batangas	8.6	10.0	53.9	63.6	70.0	6.36	9.08%
Total (Inc. Metro Manila)	2,276.8	2,434.9	2,941.3	3,425.7	3,892.1	189.57	4.87%
Total (Exc. Metro Manila)	883.4	953.0	1,226.0	1,442.5	1,685.6	189.57	11.25%

Source: Meralco

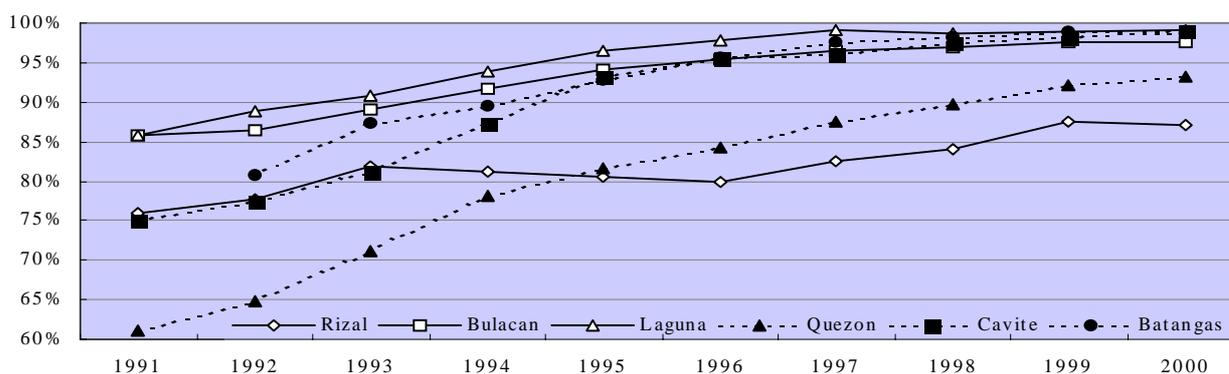


Figure-1: Electrification Ratio of the Project Area

2.3.2 Energy Consumption and its Usage

According to the interview survey^{*6}, which was carried out in six barangays and collected 108 answers, average energy consumption was 891.6 kWh/annum^{*7}. This consumption was considerably lower than average consumption of residential consumers within Meralco's franchise area, 3,341.7 kWh.

At present, electricity has been utilized for consumption rather than for production. The interview survey results show that the beneficiaries used electricity mainly for lighting purposes (100%), for TV sets (83.7%) and for electric fans (83.7%). In addition, electrification of the Project area increased the use of other electrical appliances such as electric irons (55.8%), radios (54.8%), refrigerators (38.7%), radio cassette players (30.8%) and washing machines (20.8%).

2.3.3 Effect of Changing Illegal Connection into Legal Connection

Prior to the Project, some of the households accessed electricity through kolorum^{*8} operators who are either legitimate Meralco customers or unscrupulous groups that tapped directly into the main power lines. According to the interview survey, those conversions accounted for 4.6% of total respondents. These kolorum operators rationed electricity to interested households and charged 4.5- 5.0 peso/kWh^{*9} on average. This illegal tariff level was higher than Meralco's legal tariff level of 2.41 peso/kWh in 1991. Aside from being expensive, it was said that the illegal connections were also dangerous, unreliable and provided extremely low voltage because of inappropriate and inadequate support facilities.

Owing to the Project implementation, these illegal connections were abolished, and access to electricity became legal instead. In addition, because of the Project implementation, energy theft has decreased to some

⁶ Details of the interview survey will be mentioned in section 2.4.1 of this report.

⁷ 891.6± 188.2 kWh/annum with 95% confidence interval (Sample= 96). According to Meralco's survey, which was carried out in 1999 for 68 households in rural areas; the average energy consumption was 792 kWh/annum. Accordingly, the interview survey result could be considered to be reliable.

⁸ "Kolorum" means illegal in Tagalog.

⁹ Quoted from the appraisal report in 1991

extent, resulting in a reduction of non-technical^{*10} transmission^{*11} and distribution loss. Recorded figures from before the Project (1990) and after the Project (2000) show that the non-technical loss of Meralco's grid system has been reduced by 60.3%, while the technical loss has been reduced by 15.8%.

Table-3: Transmission and Distribution Loss of Meralco's grid system (Unit: %)

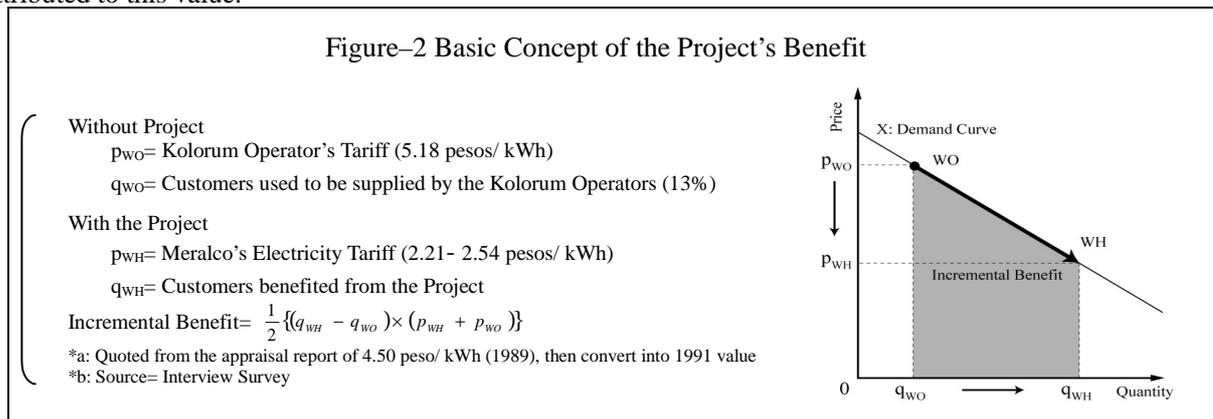
	Target level	1990	1995	1996	1997	1998	1999	2000
Technical Loss	7.68	9.12	8.63	8.38	8.32	7.98	7.83	7.68
Non-tech. Loss	1.82	6.29	4.39	3.77	4.08	3.82	3.77	2.50
Total	9.5	15.42	13.02	12.15	12.40	11.80	11.60	10.18

Source: Meralco

2.3.4 Economic Internal Rate of Return (EIRR)

At the time of the appraisal, Economic Internal Rate of Return (EIRR) was calculated at 14.0%. EIRR is re-evaluated, taking into account the changes in project cost, the actual number of electrified households, actual unit price of power purchase cost and any other relevant data.

The economic life of the project is assumed to be 30 years. All prices and costs are expressed in Philippine pesos year 1991 value. The costs consist of capital cost, operation and maintenance cost, and Meralco's electricity purchase cost from NPC. Incremental benefit is calculated by taking into account the increase in the number of consumers, and decrease in the economic cost of electricity levied on consumers. As a result, the re-evaluated EIRR is worked out at 6.7%. The lower electricity consumption amount per household actually realized and the increases in the electricity purchase costs and in electricity tariffs attributed to this value.



2.4 Impact

2.4.1 Positive Impacts on the Population in the 6 Provinces

The interview survey was implemented to identify the Project's effects, impacts and beneficiaries' sense of satisfaction.

Prior to the interview survey, a site survey was carried out in barangay San Roque, Rizal Province, and in barangay San Vicente, Laguna Province. Based on this survey, the draft questionnaire was modified and finalized.

Subsequently, the interview survey was executed using the revised questionnaire with the help of Meralco's design and construction group. The respondents for the interview survey were selected randomly by the interviewers at six Meralco project areas, two each in Bulacan, Rizal and Laguna. The interviewers made house calls and conducted interviews until they had reached the

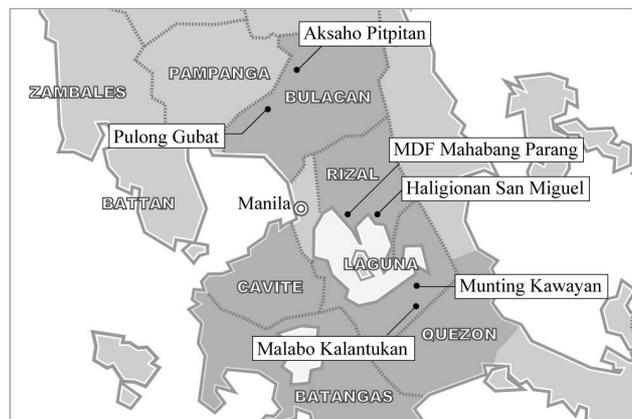


Figure-3 Interview Survey Site

¹⁰ Non-technical Loss – loss attributed to administrative loss and [pilferages theft?].

¹¹ Sub-transmission (below 69 kV level) operated by the Meralco.

targeted number (108) of respondents. The locations of these project areas are shown in the Figure-3.

a) Increase in Job Opportunities and Earnings

The electrification has provided job opportunities. Some villagers in the electrified barangays have started selling ice cream and chilled drinks, and others have started selling water pumped using electricity (electrical pumps). In another case, the owner of a general store in the barangay was able to keep his store open at night.

Some beneficiaries began to do piecework at home, even after dark. In one case, a housewife living in San Vicente was doing crayon packaging even before electrification. After the Project, she was able to continue working at night, resulting in increased earnings. As a consequence, her household could purchase an electric fan and radio-cassette player. According to the interview survey, 9% and 3% of respondents reported, respectively, an “Increase in Income and/or Savings” and an “Increase in Job Opportunities” as positive impacts of the Project. (See the Figure-5).



Figure-4 General Store in San Roque

b) Decrease in Burdens of Housework

Although the Project did not have specific development goals for women, it nevertheless delivered a number of benefits to women. Some beneficiaries were able to replace charcoal irons with electric ones. The addition to the household of conveniences such as the refrigerator, electrified water pump, and washing machine have lightened the workload of women.

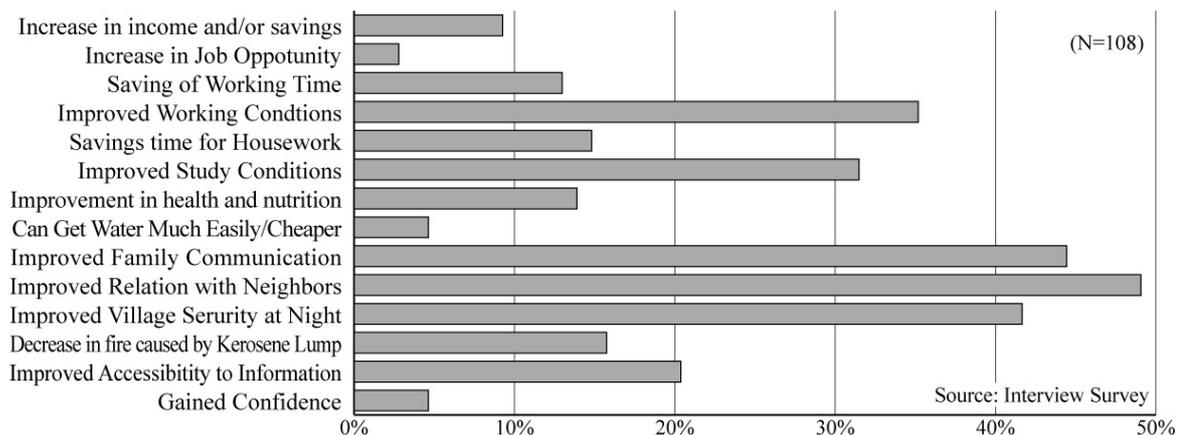


Figure-5 Selected Positive Impact on the Interview Survey

c) Increasing Nighttime Activities

The results of the interview survey show that the dinnertime and sleeping time of respondents shifted back by 1–3 hours after the electrification project, while the times at which they woke up and ate lunch remained unchanged. This increased opportunities for education, piecework and entertainment. Also, the well lit rooms created better study conditions for children.

Beneficiaries reported visiting their friends’ houses, receiving visitors at night, watching TV programs, watching movies using a video machine, and using CDs to listen to and sing karaoke-style, among other activities. Such reciprocal visits may be reflected in the number of people who noted answer of “Improved Relations with Neighbors”.

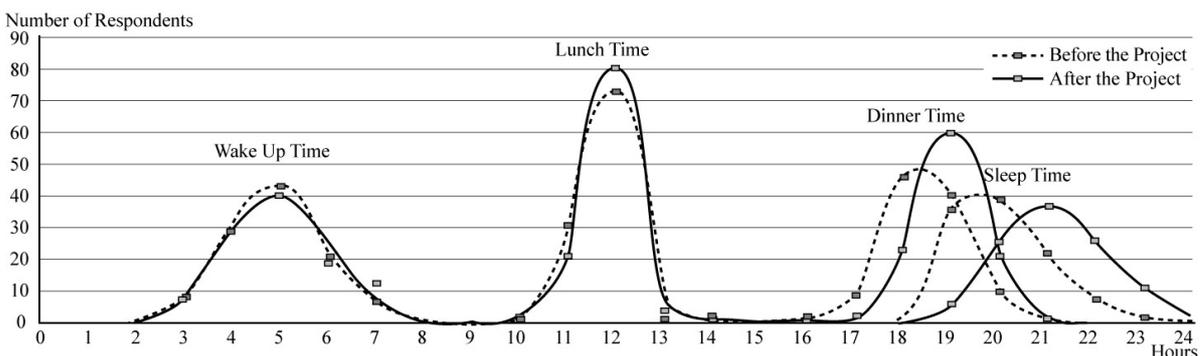


Figure-6 Change in the Time Schedule in a Day

d) Improving Security at Night.

42% of respondents asserted improvement of the barangay's after-dark security. In addition, before the Project, most of the population in the Project area used kerosene lamps, which sometimes caused fires. Hence, the electrification by the Project has reduced the probability of future fires.

Since 1996, Meralco has placed importance on a street lighting project, creating a streetlight office to manage the program. From mid-1996 to December 2000, 78,263 streetlights were installed within its franchise area. The Project, coupled with this street lighting project, has contributed to improved pedestrian safety at night.

e) Improving Accessibility to Water

In the case of barangay San Roque, Rizal Province, people used to purchase water from a water truck, coming from another barangay, at 25 peso/drum before the Project. As a result of electrification, one beneficiary purchased an electrified water pump and started to sell water for 20 pesos per a drum.

Moreover, in the case of barangay San Vicente, Laguna Province, neighbors purchased and installed an electrified water pump after electrification, and split payment of the electricity tariff among themselves. As a result, they can access water on demand.

Except for these barangays, which were visited prior to the interview survey, the interview survey result indicates that as a result of the Project, 5% of respondents have been able to access water more cheaply/easily than before.



Figure-7 Electrified Water Pump in barangay San Vicente

f) Organization of the Community Group and Acquisition of the Right of Residence

Applicants for electrification are required to prepare the following: proof of security of tenure or government proclamation to that effect, a Barangay certificate, a right-of-way permit, a house wiring permit and an electrical installation certificate. However, some of the applicants were squatters on public areas or private land at the time of application. In the case of barangay San Roque in Rizal Province, which has about 1,000 households, most of the residents were squatting on public land, and consequently were not eligible to apply for electrification.

During the implementation of the Project, they organized a community group with the help of Meralco staff and petitioned the mayor for acquisition of the right of residence. As a result, they successfully acquired tenancy rights in February 1999, and were subsequently granted the right of access to electrification. This process of lobbying for electrification rights created a sense of unity among the residents. As such, after the electrification, they installed some streetlights by themselves to improve the barangay's nighttime security. Electricity for the streetlight was connected from the nearest households, and the electricity tariff was split among the residents living in the immediate vicinity.

Recently, residents of San Roque barangay requested that the Municipality install more streetlights, with the Municipality paying the necessary tariffs. Currently, right of residence, terms and the amount of payment are under negotiation between the community group and the Municipality.

In contrast to the "Metro Manila Depressed Area Electrification Project", which was financed by ODA loan as well, the target area of this project was rural, which suggests there were fewer squatters and fewer cases where the right was granted. However, since the application for electrification required organizing of a community group, the bonds among residents strengthened considerably because of the coordinated effort required. The survey supports this conclusion: 49% of respondents replied that their relations with neighbors have improved.

2.4.2 Negative Impacts on the Socioeconomic Aspects

Among the 108 respondents, only 16 mentioned negative impacts, 13 reporting an increased financial burden and four reporting a decrease in sleeping time (one respondent reported both negative impacts). In addition, one respondent also referred to TV noise pollution from his neighbor's house.

Of the 13 respondents who selected "increasing financial burden", 10 were in debt for less than 2,000 Pesos; this debt level is not considered serious as it is less than their monthly income. However, the other 3 respondents have liabilities of 10,000–50,000 Peso, while their income is less than 5,000 Peso/month.

Of course, all of their debt did not result from the electricity tariff, though the respondents pointed to high tariffs as a negative impact. Incidentally, the interview survey shows that 46% of respondents believe the electricity tariff to be “high” or “very high”. The appropriateness of the electricity tariff and the detailed observations of respondents concerning the tariff level will be described in a later section.

2.4.3 Environmental Impacts

The Project required small land plots for electric poles, and a minimal number of trees were cut down to install feeder lines and transformers. Thus, the negative impact of the Project was negligible. In fact, the Project had some positive effects on the environment. It reduced, to some extent, the cutting of trees for firewood, which was the local population’s main fuel for cooking before electrification of the Project area.

2.5 Sustainability

2.5.1 Profile of the O&M (Operation and Maintenance) Agency

Operation, maintenance, and the collection of revenue generated from the Project facilities are executed by Meralco. Meralco serves around 3.7 million consumers -- equivalent to a total population of 18.7 million -- in Metro Manila and the surrounding area. It utilizes a total of 24,428 GWh of energy, which is around 54% of the total Philippine energy generation. NPC supplies 86.8% of total energy purchased, the rest coming from two IPPs¹² named Quezon Power Phil. Ltd. and First Gas Power Corporation. 91% of Meralco’s customers belonged to the residential sector in 2000. The remaining 9% consist of commercial and business establishments, industries and streetlight customers. Of Meralco’s total energy sales of 21,881 GWh for 2000, 29.2% were to industrial customers, 34.4% to commercial and 35.6% to residential.

2.5.2 Capability for Operation and Maintenance of the Project Facilities

To effectively deliver service to its customers, Meralco divided its franchise area into 3 regions: North, Central and South. Each region has a transmission & distribution area office, which is in charge of construction, operation and maintenance. The area offices of each of the region consists of three sector offices for the North Region, four sector offices for the Central Region and three sector offices for the South Region. In the case of complications in distribution facilities, villagers can not only visit these offices directly, but can also contact them by telephone and e-mail.

Customer service areas are responsible for functions such as billing, revenue collection, and receipt of applications. The customer service area has three area offices: central, south, and north. Each area office supervises 29 sector offices. These offices are connected by a local area network, and customers’ data are handled via computer. These systems are well developed.

The company has endeavored to reduce its manpower in order to supply energy at much cheaper prices. The company had 6,408 regular personnel at the end of 2000, which is 27% lower than the peak manpower complement of 8,765 in 1993. As a result, the customer to employee ratio has significantly improved, from 368.2 in 1996 to 573.1 in 2000.

To ensure increased productivity as the manpower complement is decreased, massive training and development intervention was implemented to develop critical competencies. Technical staff and administrative staff attend a one-week orientation after joining the company; they subsequently attend respective 3-month and 5-month training courses. In addition, when employees are promoted, every 2 years on average, they must take part in a training course and pass an evaluative test. From 1996 to 2000, then, the company trained an average of 15,000 participants per year. It is concluded that the staff skill and management levels have been strongly enhanced through the training system.

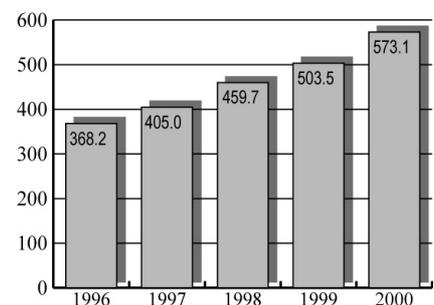


Figure-8 Customer to Employee

Source: Meralco

¹² IPP (Independent Power Producer): A private entity that owns facilities to generate electric power for sale to utilities and end users.

2.5.3 Stability of Meralco's Grid System

The Table-4 illustrates the frequency and duration of power failure in Meralco's grid system. The Interruption Frequency Rate (IFR) is the average number of times each customer experiences interruption within a year. Also, the Cumulative Interruption Time indicates the cumulative length of power failure that a customer experiences within a year^{*13}. The figures show a decreasing trend.

For the year 2000, causes of Interruption can be classified according to the following measurement parameters: storm/lightning (49.3%), system troubles (9.6%), human error (2.2%), contact with trees (3.5%), transients (1.7%), scheduled interruptions (11.0%), NPC troubles (22.7%).

Table-4: Frequency and Duration of Power Failure of Meralco's grid system

	1993	1994	1995	1996	1997	1998	1999	2000
Interruption Frequency Rate (Times/year/consumer)	278.76	46.74	48.82	37.70	34.66	34.63	34.97	30.45
Cumulative Interruption Time (hours/year/consumer)	870.79	82.47	109.71	36.41	35.47	40.47	36.32	61.94

Source: Meralco

Moreover, Meralco aims to reduce transmission and distribution loss to 7.68% of technical loss^{*14} and 1.82% of non-technical loss, totaling 9.50%, by 2004. In line with this policy, the company has an ongoing program of continuous system upgrading and expansion. From 2001 to 2005, it has earmarked 54.13 billion Pesos to improve and expand the electric system.

2.5.4 Financial Viability of Meralco

Meralco's financial viability has been considered healthy for a long time. And even now, Meralco ranks among the first-class corporations in the Philippines^{*15}. However, the financial viability of the company has declined gradually in the past five years as a result of an increase in power purchase costs and a rejection of request to raise the electricity tariff.

In the Philippines, the electricity tariff is regulated by the Energy Regulatory Board, which was established in 1987. The board was supposed to set the electricity tariff so that Meralco earns an 8-12% Return on Rate Base^{*16}. However, Meralco's proposal for a rate increase has not been approved since 1994, while the energy purchase cost from the NPC has increased year by year. Consequently, the company's Return on Rate Base has decreased steadily, hovering below the minimum target level of 8.0% since 1996. Along with this deterioration of profitability, financial stability, for example the debt equity ratio^{*17} and current ratio^{*18}, has worsened.

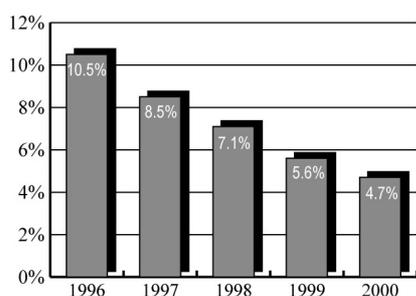


Figure-9 Return on Rate Base

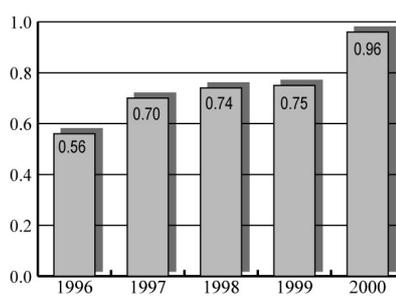


Figure-10 Debt Equity Ratio

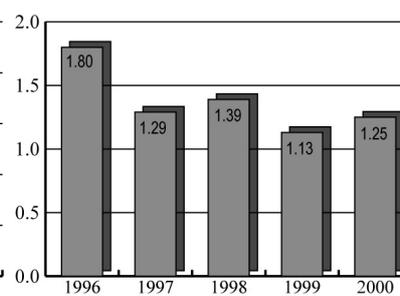


Figure-11 Current Ratio

Source: Meralco

¹³ IFR= ΣKW interrupted/ Average System kW demand, CIT= ΣKWH interrupted/ Average system kW demand

¹⁴ Technical Loss – is the heat loss of transformers, conductors and other line devices

¹⁵ For example, the Far Eastern Economic Review ranked Meralco among the top ten corporations of the Philippines for its year 2000 operations. In addition, Finance Asia, a business publication recognized Meralco among the best-managed companies in the country for the same period.

¹⁶ The ratio of allowed operating income to a specified rate base, expressed as a percentage. (Specified rate base represents the utility's appraised asset value - or investment in facilities, equipments and other property used in the provision of electric service - and one-sixth of the utility's annual operation and maintenance expense)

¹⁷ Net borrowings of a company divided by shareholders' funds. The ratio shows the amount of financing that is provided by sources other than the shareholders. The higher the percentage, the more risky for lenders to the company. Most lenders like the percentage to be below 0.5. If it is above 1.0, the company is said to be highly geared.

¹⁸ Current assets divided by current liabilities. A financial ratio, which shows how easily the company could pay its bills if all its creditors demanded payment at once. In theory this figure should be at least 1.0, because if it's lower than 1 it means that the company does not have the liquidity to pay all its creditors straight away.

Though the company still sustains its profitability and financial viability at present, its future financial stability is uncertain.

Table-6: Profit and Loss of Meralco in Past Five Years (Unit: 1,000 Peso)

	1996	1997	1998	1999	2000
Revenues	57,086	67,122	81,572	84,431	103,691
Operating Expenses	52,559	62,716	76,856	80,196	99,708
- Purchased Power	42,292	50,404	62,800	65,159	82,719
- Operation and Maintenance	4,052	5,811	6,289	6,861	8,759
- Depreciation	1,998	2,193	2,885	3,479	3,434
- Others	4,217	4,308	4,882	4,697	4,796
Operating Income	4,527	4,406	4,716	4,235	3,983
Other Income and Charge	537	1,360	297	-925	-1,493
Net Income	5,064	5,766	5,013	3,310	2,490

Source: Meralco

2.5.5 Reasonability of Connection Fee and Tariff

The electricity tariff levied on consumers consists of a basic charge, a Power Purchase Adjustment^{*19} (PPA), a Currency Exchange Rate Adjustment^{*20} (CERA) and other adjustments. Rapid Peso devaluation vis-à-vis the US Dollar, combined with a steep rise in world oil prices resulted in a significant increase in the PPA and CERA. As a result, these adjustments, especially the PPA, have become a heavy burden for consumers. At present, the PPA accounts for about 50% of the total electricity tariff levied on consumers. The retail rate of electricity in the Philippines is currently the second highest in Asia, after that of Japan.

It is said that this PPA problem results from soaring oil prices as well as from the Philippines' heavy dependence on oil for generation. Moreover, the NPC's inefficient operation and disadvantaged contracts with IPPs have adversely affected the overall electricity price.

Based on these critical conditions, the Electric Power Industry Reform Act of 2001 went into effect on June 25, 2001. The law aims for privatization of the NPC's, and for a subsequent reduction of the electricity tariff. In compliance with the Electric Power Industry Reform Law, the Energy Regulatory Board (ERB) issued a resolution reducing the NPC's basic charge by 0.3 Peso per kWh^{*21}. The reduction of the NPC's rates has been reflected in the electricity bills of Meralco residential customers since August 2001. The rollback of power rates translates into a savings of 60 Pesos an average household (i.e., one that uses 200 kWh a month). In addition, the NPC is reviewing its IPP contracts to determine ways it can cut down on its IPP-related costs.

2.5.6 Observation of Respondents on the Electricity Tariff

As already mentioned, the electricity tariff for residential consumers, the majority consumer category in rural areas, has increased rapidly (to minimize the cross-subsidy). The interview survey results show that 45% of respondents recognized the electricity tariff as "Fair", while 46% of respondents felt the electricity tariff was "high" or "very high". Incidentally, the average electricity tariff levied on the respondents was 562.6 pesos/month^{*22}, which accounted for 11.1% of the respondents' average income of 5088.0 pesos/month^{*23}.

43% of respondents always paid their electricity tariff on schedule, while 53% of respondents delayed somewhat in paying their bill, and 1% of respondent always delayed paying their bill. As a result, 18.8% of respondents experienced disconnection of electricity. However, all of them successfully settled their bills with a 20 Peso reconnection charge, and were reconnected within three days after payment.

As for the initial connection fee, only 24.1% of the respondents considered it "high" or "very high", and

¹⁹ Power Purchase Adjustment: This covers the increase or decrease in the cost of power brought from the NPC and other power supplies. 98% of PPA goes to NPC and IPPs; the rest goes to government thorough taxes.

²⁰ Currency Exchange Rate Adjustment: This covers the increase and decrease in the operation and maintenance expenses and foreign debt principal payments due to change in the Peso-Dollar exchange rate.

²¹ While there is a reduction in power rates due to the implementation of the electricity reform law, an existing petition of Meralco asking for an equal 0.3 Peso per kWh increase on its tariff rates may however offset the benefits, if it will be approved.

²² 562.6± 181.9 pesos/month with 95% confidence interval (Sample= 108)

²³ 5,088.0± 886.2 pesos/month with 95% confidence interval (Sample= 108)

11.1% of respondents found it to be “cheap”. Meralco provides applicants of rural areas or depressed households with an easy payment plan^{*24} for the connection fee. It is thought that this scheme effectively eases the burden on the applicants who most need such assistance.

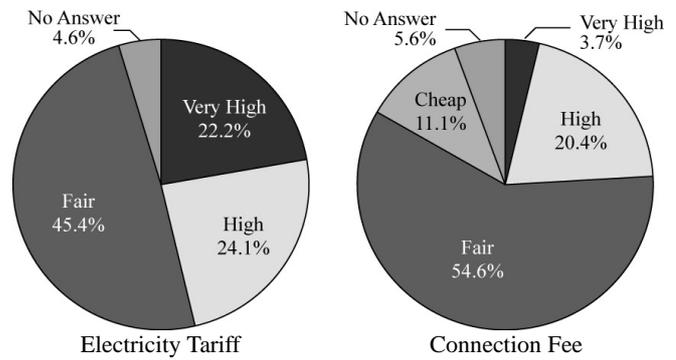


Figure-12: Observation of Respondents to the electricity
Source: Interview Survey

²⁴ Terms of credit are 5 years repayment period with no interest.

Comparison of Original and Actual Scope

Items/Activities	Original Scope (At time of Appraisal)	Actual Scope
<p>(1) I. Project Scope</p> <p>Equipment</p> <ul style="list-style-type: none"> - Substation Equipment - Transmission Line - Pole - Secondary Transformer - First Transmission Line - Secondary Transmission Line - Service Drop - Meter 	<p>34.5/6.24kV 5 MVA transformer x 1</p> <p>34.5/6.24kV 1 MVA transformer x 1</p> <p>34.5/2.4/4.16kV 750 kVA transformer x 1</p> <p>34.5 kV 10.5 km</p> <p>13.8 kV 2.5 km</p> <p>20.0 kV 2.5 km</p> <p>4.8 kV 4.3 km</p> <p>41,867 poles</p> <p>1,900 nos. (32,030 kVA)</p> <p>2,374 cct-km</p> <p>1,408 cct-km</p> <p>1, 048 cct-km</p> <p>106,213 meters</p>	<p>As Planned</p> <p>Not Available</p> <p>68,400 poles</p> <p>3,100 nos.</p> <p>3,800 cct-km</p> <p>2,300 cct-km</p> <p>2,300 cct-km</p> <p>173,700 meters</p>
<p>II. Implementation Period</p> <ul style="list-style-type: none"> - Loan Agreement - Detail Design - Procurement Equipment - Construction of Distribution System - Connection & Energization - Completion of Energization 	<p>July. 1991</p> <p>Jul. 1991 – Oct. 1991</p> <p>Nov. 1991 – Mar. 1996</p> <p>Jan. 1992 – Jun. 1996</p> <p>Mar. 1993 – Sep. 1996</p> <p>Sep. 1996</p>	<p>July. 1991</p> <p>July 1991 – July 1999</p> <p>Nov 1991 – July 1999</p> <p>Jan 1992 – Aug 1999</p> <p>Mar 1992 – Oct 1999</p> <p>Oct. 1999</p>
<p>III. Project Cost</p> <ul style="list-style-type: none"> Foreign currency Local currency Total ODA Loan Portion Exchange Rate 	<p>3,760 million Yen</p> <p>1,067 million Peso</p> <p>11,044 million Yen</p> <p>8,283 million Yen</p> <p>1 peso = ¥ 6.75 (as of July 1990)</p>	<p>4,140 million Yen</p> <p>8,582 million Yen</p> <p>12,722 million Yen</p> <p>7,414 million Yen</p> <p>1 peso = ¥ 3.65 (Average exchange rate 1993-1999)</p>

Independent Evaluator's Opinion on Meralco Rural Electrification Project

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1. The objectives of the project are still relevant to the development strategies of the Philippines.
2. The project's impacts on job opportunities, women's welfare, public safety, productive activities, consumer welfare, community cooperation and environmental protection exceed its negative impacts such as increased financial burden, decrease in sleeping time, TV noise pollution, and cutting of trees to install feeder lines and transformers.
3. The project successfully electrified 189,567 households in six provinces. However, the gain in effectiveness is paid by a loss in efficiency because the increase in the target number of households led to delays in acquisition of rights of way and to dealings with local organizations. The project's objective of providing electricity to rural areas is relevant to the Medium-Term Philippine Development Plan (2001-2004) and the Philippine Energy Plan (2002-2011).
4. The sustainability of the project will depend on the continued patronage of the majority of the rural households on electric power for their energy needs. This patronage will depend on how affordable and how reasonable the level of tariff is set for rural electric service. If rural electricity pricing relies mainly on market forces, no private investor can recoup its investment. Philippine development policy allows the provision of a subsidy equal to the difference between the tariff level that makes investment viable and the tariff level that is affordable to rural households.
5. Sustainability is the durability of positive impacts after the termination of the JBIC technical cooperation channeled through the project. Forty six percent (46%) of the respondents indicated that the electricity tariff was "high" or "very high". This means that a significant proportion of rural households are still using kerosene and gas (LPG) after the electrification project because of the price level. Thus, although the project is relevant to the development goals of the Philippines, its sustainability will depend on its affordability to the rural households who have relatively lower incomes than urban households.