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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

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PROJECT PAPER AMENDMENT
INDONESIA
RURAL ELECTRIFICATION
497-0267

MARCH 1981

UNCLASSIFIED

INDONESIA
AMENDMENT
TO RURAL ELECTRIFICATION
PROJECT NO. 497-0267

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AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input checked="" type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number <u>1</u>	DOCUMENT CODE <u>3</u>
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2. COUNTRY/ENTITY INDONESIA	3. PROJECT NUMBER <u>497-0267</u>
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4. BUREAU/OFFICE ASIA	<u>04</u>	5. PROJECT TITLE (maximum 40 characters) Rural Electrification
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6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY <u>03</u> <u>30</u> <u>83</u>	7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY <u>77</u> B. Quarter <u>4</u> C. Final FY <u>82</u>
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8. COSTS (\$000 OR EQUIVALENT \$1 = Rp625)						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	27,950	5,050	33,000	35,800	5,200	41,000
(Grant)	(2,950)	(50)	(3,000)	(10,800)	(200)	(11,000)
(Loan)	(25,000)	(5,000)	(30,000)	(25,000)	(5,000)	(30,000)
Other U.S.						
1.						
2.						
Host Country						
Other Donor(s)						
TOTALS						

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	B153	060	060	6,000	30,000	5,000	-	11,000	30,000
(2)									
(3)									
(4)									
TOTALS				6,000	30,000	5,000	-	11,000	30,000

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) <u>031</u> <u>252</u>	11. SECONDARY PURPOSE CODE <u>201</u>
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12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)				
A. Code	BR	BL	BS	COOP
B. Amount	30,000	30,000	30,000	5,000

13. PROJECT PURPOSE (maximum 480 characters).

Improved standard of living in the related areas by making electricity available for increased productivity and to improve the quality of life by providing electricity at a price most rural residents can afford. An important element will be stimulate economic and agricultural production and create employment opportunities.

14. SCHEDULED EVALUATIONS Interim MM YY <u>12</u> <u>81</u> Final MM YY <u>12</u> <u>83</u>	15. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input checked="" type="checkbox"/> 941 <input checked="" type="checkbox"/> Local <input type="checkbox"/> Other (Specify)
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a 21 page PP Amendment)

This Project Paper Amendment adds additional funds to complete the activities as planned in the original Project Paper.

17. APPROVED BY	Signature 	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY <u>01</u> <u>11</u> <u>81</u>
	Title Thomas C. Niblock Director, USAID/INDONESIA	

AMENDMENT
RURAL ELECTRIFICATION PROJECT NO. 497-0267

PART I. RECOMMENDATION AND SUMMARY

A. FISCAL DATA

See preceding Project Data Sheet for fiscal information.

B. RECOMMENDATION

The USAID recommends authorization of an additional \$5.0 million in grant funds to facilitate the successful completion of Rural Electrification Project No. 497-0267. Annex A comprises the draft amendment to the Project Authorization.

Of the \$5.0 million proposed increase, \$4.0 million are planned for obligation in FY 1981 with the remaining \$1.0 million to be obligated in FY 1982. Incremental AID grant financing will be completed by the local currency equivalent of \$2.0 million and foreign exchange total of \$5.0 million in further Government of Indonesia (GOI) support as summarized below.

C. GRANTEE

The grantee is the GOI. Representing the GOI for project implementation are the National Electric Power Company (PLN) and the General Directorate of Cooperatives (DGC). The PLN is implementing seven sub-projects in Central Java, while the DGC is implementing three cooperative projects on Indonesia's outer islands. Annex B contains the GOI's letters of application for increased AID assistance to this Rural Electrification Project.

D. SUMMARY

Because of insufficient funding provided in the original grant and unexpected high inflation, the project requires additional AID and host country financing for the implementation and successful completion of the project along with the planning of follow-on investments by other donors. The original

* However, the full \$5.0 million is shown in the FY 81 Congressional Presentation and the USAID is prepared to obligate the entire amount in this fiscal year.

project goal remains unchanged. It is to improve the standard of living and increase employment and productivity among Indonesia's rural population. Similarly, the project purpose and scope stay the same, namely to demonstrate that electricity can be provided to rural areas of Indonesia at a price which the majority of the people can afford through 10 technically sound and financially viable systems (see Map Annex G). This Project Paper Amendment adds additional funds to complete the activities as planned in the original Project Paper.

1. Increased AID Support

To help achieve the project purpose, additional AID grant funding will be allocated approximately as follows:

- i. An estimated \$2.75 million to continue needed architectural, engineering and construction supervision services (A&E). These funds have already been committed to an A&E consulting firm, C. T. Main Inc., through an incrementally funded contract. The contract amendment was authorized by AID/W (79 State 224741) and requires \$2.3 million for services and \$450,000 for housing (for description, see pages 9 & 10);
- ii. An estimated \$1.25 million to continue essential advisory assistance for operation, management and training services (OMT). Of this amount, \$800,000 has already been committed to the NRECA contract as authorized by 79 State 255475. In addition, \$225,000 is needed to provide 24 person months of additional consulting services as described in Part III.A.2. These funds will be committed to the existing contract with the National Rural Electric Cooperative Association (NRECA). An estimated \$1.07 million will be allocated to consulting services and \$180,000 to housing (see pages 10 & 11);
- iii. An estimated \$100,000 for additional participant training for PLN and DGC staff (see page 11);
- iv. An estimated \$250,000 for additional technical cooperation in promoting productive uses of electricity among beneficiary groups through personal services consultants (see pages 11-13);
- v. An estimated \$400,000 for contingencies associated with TA and training operations (see pages 13 & 14);

vi. An estimated \$250,000 to finance feasibility studies for a follow-on project to be financed by other donors (see pages 14 & 15);

2. Increased Host Country Support

GOI contributions will increase along with the incremental AID assistance. An estimated \$1,000,000 in additional GOI resources will be allocated to consultant support (housing outside Jakarta, office space and supplies, vehicles, maintenance, etc.) as well as evaluation, training and productive uses activities. The GOI will also provide about \$100,000 in additional credit to the three RE cooperatives and about \$100,000 for the construction of a fuel storage tank to serve one of the RE coops. Finally, because of cost overruns, the GOI will be required to increase its project funding by \$5 million.

Thus, the total GOI budget will increase by an estimated \$6.2 million and the total project budget by \$11.2 million. Table I below breaks out the Project Budget Increase.

E. FINANCIAL PLAN

Based on the above summary description, additional AID and host country resources will be allocated to the project approximately as follows.

Table 1
Project Budget Increase
(in US \$000s)

<u>Source of Funds/ Use of Funds</u>	<u>AID</u>	<u>GOI</u>	<u>TOTAL</u>
1. Technical Services:			
- A&E TA	2,750	600	3,350
- OMT TA	1,250	300	1,550
- Productive Uses	250	100	350
- Follow-on Activities	250	-	250
2. Training	100	-	100
3. Generators/Fuel Storage	-	5,100	5,100
4. Contingencies	400	-	400
5. Credit	-	100	100
	<u>5,000</u>	<u>6,200</u>	<u>11,200</u>
Total	=====	=====	=====

Detailed descriptions, scope and supporting cost detail for each of the above line items are contained in Part II of this paper and back-up annexes.

F. PROJECT ISSUES

Major issues related to the project, identified during Project Paper development, include the host country's capacity to administer/implement a project of this magnitude as well as the project's economic/financial viability, in particular, the affordability of electric service to Indonesia's rural poor. These and related concerns are, and will remain, the subject of continuing USAID/GOI attention during implementation of this demonstration project.

Though not of the project magnitude, the PLN and DGC have already demonstrated a capacity to construct and operate rural electric systems through the development of two pilot projects. The PLN started a pilot effort in three villages of Klaten, Central Java by using its own "Off Shelf Materials." It is now providing rural electrification service to 1,983 customers. After 20 months of operation, the consumption of electricity by the Klaten customers slightly exceeds the feasibility projections (see Annex E). Also, on August 8, 1980 the DGC inaugurated the Lombok pilot project. The Lombok RE coop now serves 1,051 customers. The average monthly bill for October was Rp.1,830 for 23 KWH consumption of electricity. The early indications of the pilot projects are that the PLN and DGC can deliver electricity to the rural areas and the rural resident can afford it.

PART II. PROJECT DATA AND BACKGROUND

A. PROJECT DATA

The Mission received authorization from the AID Administrator on March 8, 1978 to enter into Loan and Grant Agreements with the Government of Indonesia (GOI) for the Rural Electrification Project. The Mission was authorized up to \$30 million in loan funds and up to \$6 million in grant funds. The Grant Agreement was signed on March 30, 1978 and the Loan Agreement on May 5, 1978. The Condition Precedent for the Grant was met on March 31, 1978. One set of Conditions Precedent for the Loan was met on October 10, 1979, and the other on

January 10, 1980. As of September 30, 1980, accrued expenditures for the grant were \$1,143,000, for the loan \$214,000.

B. BACKGROUND

The project has two parts, representing two different approaches to rural electrification. In Central Java, the State Power Company (PLN) will extend service from the existing PLN grid into seven rural areas in a manner which can provide electricity at a price which the rural population can afford. In the three outer island areas, the Directorate General of Cooperatives (DGC) will assist three private cooperatives to design, construct and operate their own rural electric systems.

Two grant funded technical assistance contractors are working with the PLN and DGC in carrying out the project. The first, C.T. Main, provides the PLN, DGC and three rural electric (RE) coops assistance with design, procurement, material handling, construction supervision and training of technical personnel. The second, the National Rural Electric Cooperative Association (NRECA), provides a team of consultants which advises the PLN, DGC and three RE co-ops and provides training to their staffs in organization, operation and maintenance. Both contractors have personnel assigned to the rural project sites as well as to PLN and DGC headquarters sites in Jakarta.

The project is a multi donor effort with the Canadian Government (CIDA) contributing the generation plants for the three outer island projects and the Dutch Government financing the primary conductor (wire) requirements for the seven Central Java systems.

Under the two parts of the project, the PLN, DGC and three RE coops will establish 10 rural electrical systems by carrying out six interrelated activities; design of electric systems (circuit routing); procurement of the necessary quantities of poles, line hardware and conductor (wire); construction of the electrical distribution system; construction of headquarters and warehouse for each area and installation of appropriate generation facilities for the three RE coops; training of personnel needed to manage, operate and maintain the systems; and establishment of a productive uses program. The sequence of these activities is the key to project implementation. Information gathered during the design of the electrical system is needed to determine the

total quantities of materials to be procured. The final design or layout of the circuit is needed by the government entity or contractors charged with clearing the right-of-way and setting and framing the poles. Warehouses must be completed to store some of the procured materials and trained individuals are needed to operate and maintain the completed system. Tools and equipment are needed for the construction and continuous operation of the electrical systems. Finally, a productive uses program must follow installation to maximize the impact of electrification on jobs and income in the service areas.

Considerable progress has been made on both parts of the project since the Grant and Loan Agreement signings. Surveying and center-line staking are completed for the seven Central Java sites, and two of the outer island sites. The third outer island site is nearly completed. The data from the surveying and center-line staking has allowed the executing agents to refine their procurement lists to exact needs and begin the procurement process.

Invitations for Bids (IFBs) have been issued by the PLN for tools and equipment, conductor and distribution hardware. The IFB for housewiring materials will be issued the first quarter* of 1981. Furthermore, the PLN has already received an initial delivery of wood poles. The DGC and the three RE coops have also issued invitations for bids for conductor, line hardware, poles, other distribution materials and the generation facilities including buildings, generators and other equipment. All the awards for these materials will be made by second quarter 81. The RE coop IFBs for operation and maintenance tools and equipment, and the local procurement of housewiring will be issued by the first quarter 81.

Construction of the electrical system is expected to begin in Central Java during second quarter 81 and in late 81 and early 82 in the three outer island sites.

The sites for the seven PLN headquarters and warehouse complexes have been bought and surveyed, and the soil testing for these sites has been completed. Construction of the buildings is expected to begin second quarter 81. The sites for the RE coop headquarters, warehouses and generation facilities have also been bought. Construction should be finished by third quarter 82.

* All quarter references are for calendar years.

Twenty-six PLN RE Management Trainees from Central Java have completed training and orientation in the United States and the Philippines. Twenty-one of these trainees will be assigned as either manager, administrative chief or technical chief at one of the seven Rural Electrification Projects. The other 6 employees are assigned to management level positions with PLN in Central Java, and will be directly involved in the Rural Electrification Program. The training of the remainder of the employees who will construct and operate the rural projects began in November 1980 and will continue throughout the construction period. A total of 302 DGC and RE coop personnel have attended 23 in-country seminars. Grant sponsored training courses have been and continue to be conducted in areas such as management, house-wiring, bill collecting, material handling, accounting, power plant operations, lineman skills, safety and productive uses.

The productive uses program is just beginning for the PLN and RE coops. A Grant funded consultant for the PLN has been provided to develop a plan and carry it out over a two year period at one of the Central Java sites. PLN will provide him with an office and counterpart staff at Klaten and will eventually have productive use staff assigned to each of the seven Central Java sites. Depending upon the success of the first consultant, USAID may provide up to two more long term consultants plus short term consultants as needed to assist specific productive uses projects which have been identified. Likewise, the resident NRECA advisors assigned to the outer island coops will assist them to conduct surveys to determine the potential commercial uses of electricity in the project areas and develop a plan for productive use programs which are action specific. The specific productive uses projects identified and agreed upon in the outer islands will also be supported by Grant funded technical assistance.

PART III. PROJECT AMENDMENT DESCRIPTION

A. INCREASED AID SUPPORT

Clearly, the project has reached a point where the loan will disburse rapidly over the next year and a half as loan-funded materials arrive and construction takes place. To bring the

project to this point has required full obligation of grant funds, making additional funding essential for a smooth continuation and successful completion of the project.

1. A&E Technical Assistance

The original grant project budget (see Table 2) provided \$3.25 million in AID funds for architectural and engineering (A&E) technical assistance.

Table 2
Original Project Budget for Grant
(in US \$000s)

	<u>USAID</u>	<u>PLN</u>	<u>GOI</u>	<u>DGC</u>	<u>TOTAL</u>
A&E Team	3,250	265		121	3,636
Indonesian Sub Contractor	-	-		861	861
OMT Team	2,100	68		101	2,269
Productive Uses Advisor	500	52		32	584
Training	100	150		150	400
Evaluation	<u>50</u>	<u>50</u>		<u>50</u>	<u>150</u>
Total	<u>6,000</u>	<u>585</u>		<u>1,315</u>	<u>7,900</u>
	=====	===		=====	=====

USAID selected C.T. Main, Inc. for the A&E work and signed a contract with them on September 18, 1978 to provide technical assistance to the PLN, DGC and three RE coops beginning in September 1978 and ending in September 1983. The original calculation of personnel needs proved to be insufficient for the project because of inadequate local subcontractors, higher inflation rates, and A&E requirements greater than originally expected. The originally budgeted \$3.25 million will only carry the C.T. Main services until August 1, 1981.

The use of a local subcontractor by C.T. Main was originally planned as a way of reducing the technical assistance dollar and total costs. A local contractor was to provide field surveyors, design engineers, draftsmen, staking party chiefs, procurement specialists and construction supervisors. This subcontractor was to be selected by C.T. Main and paid for by the DGC. After a lengthy search, C.T. Main discovered that it could not find a qualified subcontractor. C.T. Main, the DGC and the Mission then decided to substitute the needed

subcontractor work with: six additional local engineers and four more draftsmen paid for by the DGC; and three more engineers and one additional senior designer/draftsman to be provided through the C.T. Main contract.

As the work began, it was also determined that the staffing plan under the original A&E contract did not provide sufficient personnel to carry out the A&E needs of the project. C.T. Main proposed additional technical assistance: to monitor and coordinate the design work and supervise construction on the outer islands; to supervise PLN staff in the design, contracting and construction of headquarters facilities; and to design and supervise the construction of seven PLN electrical distribution systems. The Mission sought and received approval from AID/W to increase the funding level of the original C.T. Main contract (79 State 224741). On February 27, 1980, the C.T. Main contract was amended to provide a total of \$5.3 million for A&E services plus \$700,000 outside the contract for housing, subject to the availability of funds. This Grant Amendment will provide the final increment of funds already committed for the necessary person months of TA.

The total cost of the additional A&E technical assistance needs is \$2.75 million. The Grant Amendment will finance 305 person months of A&E services under the C.T. Main contract. See Annex D for a breakdown of the personnel requirements.

2. OMT Technical Assistance

As with the A&E contract, the grant funds available did not allow the Mission to fully fund the required OMT technical assistance needs. NRECA was selected for the OMT contract and began work on August 25, 1978. Their contract will only provide the needed personnel until June 1, 1981. As can be seen in Annex D, the NRECA OMT services will be needed up to and shortly beyond the system completion; the system must be completed and operating before GOI and AID can determine the organizational structure and management operations as viable. Extensions of NRECA services are needed until March 1983. The Mission sought and received approval from AID/W to increase the funding level of the original NRECA contract (79 State 255475). On December 20, 1979 the NRECA contract was amended to provide a total of \$2.7 million for OMT services, subject to the availability of funds. This grant

money will provide the final increment of funds already committed and increase the funding level to provide for an additional 24 person months.

The total cost of the additional 134 person months of OMT technical assistance required is \$1,250,000.

3. Training

The original grant project budget also provided \$500,000 for Productive Uses Consultants and \$100,000 for training. The training needs of the project in the initial two years were so great that the Mission at the request of the PLN and DGC transferred \$100,000 from the productive uses budget to the training budget. Even with the transfer, certain aspects of the training will not take place without further funding.

Only two of the RE area managers have attended the USAID/NRECA/REA eight week training course in the United States. The NRECA consultants recommend sending the other eight before completion of the 10 systems. This training has proven to be extremely valuable in the operation and maintenance of rural electric systems; in the last 10 years some 90 individuals have been sent to this course from the Philippines' rural electrification projects. Furthermore, there are no provisions for the training of pole inspectors. The importance of this training was not fully appreciated until the PLN received its first shipment of poles and discovered a high number of defects. As a result, the PLN and DGC have begun looking for alternative pole sources. Qualified pole inspectors become more critical as the PLN and RE coops start experimenting with different tree species, various diameter poles and different pole treatment facilities. The Mission proposes funding for the training in the Philippines of 12 pole inspectors, seven from the PLN and five from the DGC. Finally, all the training activities are geared toward the construction and management of the project's 10 systems. The training of individuals to expand the rural electrification system, a subsidiary purpose, has not adequately been undertaken. To finish the training requirements of the project will require an additional \$100,000 (see Annex F).

4. Productive Uses

Both PLN and DGC recognize the importance of and plan to have an aggressive productive uses program. According to the

Implementation Plans prepared by both PLN and DGC, each of the 10 project areas in Central Java and the outer islands will have a productive uses office. The Chief of this office will report directly to the operations manager of the local RE system. The Productive Uses Division Chief will be equal to the Technical Operations and Administrative Division Chiefs. The Productive Uses Division Chief will have a college education and enough experience and stature to enable him to deal effectively with subdistrict and village officials as well as the business leaders in neighboring towns and cities. The Division Chief will be assisted by one or two deputies who have experience in either agro business or small-to-medium scale industry development. They will be supported by a secretary, a small library, a vehicle and access to a copy machine.

The functions of the Productive Uses Division at each location will be:

a. Compile Information.

Not much is known about rural enterprises in the villages, except for some isolated studies, largely academic. Also, national and even regional statistics and generalizations can be meaningless where specific villages are concerned. A function of the productive uses program will be to compile and analyze information about conditions, activities and needs in the project sites.

b. Work With Local Government

Encourage local leaders and local government officials to increase the public uses of electricity in their villages and to budget for the electrification of traditional productive use activities, such as street lights, water supply systems, irrigation pumps, and the electrification of offices, schools, health clinics, cooperatives etc.

c. To Encourage Existing Firms to Covert to Project Supplied Power

Besides the provision of electricity, much can be done to improve production and expand employment in existing enterprises.

d. Promote New Enterprises

Many existing rural enterprises are losing markets to the urban industries and/or provide less than subsistence income

for long hours of labor. The productive uses program will help to establish new rural enterprises specific to the circumstances and opportunities in the villages within the project sites.

e. Bring Development to the People

Rural people do not have sufficient access to training in basic skills and job opportunities that give them hope for a better life. The productive uses program will be designed to bring project benefits directly to the rural population in the project sites.

Because of the long lead time for establishment of such a program, involving staff development, and the more complex task of identifying and establishing medium-scale industries, the productive uses program will be established as soon as possible in the life of the project.

Because of the existence of demonstration projects at Klaten, Central Java and Lombok, the PLN and DGC will initially concentrate in these areas.

Using project grant funds, USAID has provided a long term consultant to work with PLN in initiating a productive uses program in Klaten and the resident NRECA management consultant in Lombok will similarly assist the local RE Cooperative and the DGC to mount a productive uses program in Lombok.

USAID plans to provide two additional long term consultants to PLN to help PLN develop similar programs at the other six Central Java service areas. In addition, funds will be required to support the development of specific productive uses projects which are identified (and agreed upon) in each service area. An additional \$250,000 is required for this purpose. The Mission also plans to submit a PID for a new FY 83 project which would build on these initial productive uses program activities.

5. Contingencies

Because of the technical needs, the \$350,000 budgeted for contingencies in the Project Paper were redistributed to other line items when the Mission negotiated the Grant Agreement. A contingency allocation was then put back in and used for vehicles, consultants, testing and repair of

excess property generators, an environmental study, and some miscellaneous procurement. The Mission believes it prudent to create, or replenish, the contingency line item once again, especially to cover a possible extension of the PACD. A Mission review of the implementation schedule shows loan-funded procurement completed by the PACD; that is, the Mission expects loan funds to be completely disbursed by the May 6, 1983 deadline. However, the implementation schedule also shows the completion of the system and the start of house-wiring activities very close to the PACD. If there is any slippage in the timing of these activities, it is possible that some technical assistance in operations and maintenance might have to be extended beyond the Grant Agreement PACD (March 30, 1983). For this and other unpredictable events, the Mission proposes a \$400,000 allocation for contingencies; this would be eight percent of the Grant Amendment amount and bring total contingencies to five percent of the total Grant.

6. Follow-on Rural Electrification Efforts

The delay, or possible cancellation, of RE II has left open the matter of future external donor support for Indonesia's rural electrification program. RE I is expected to prove that reliable electric power can be provided to the rural areas of Indonesia at a price the poor can afford. It will not, however, provide enough experience for the institutions involved to smoothly carry out an expansion of rural electrification without outside assistance.

USAID has already invested a considerable amount in preparation for a follow-on project. Because of the uncertainties with respect to USAID support for RE II, the GOI and Mission have approached other donors to discuss possibilities for their support for rural electrification.

Some of the other donors, i.e., the West Germans, the Australians and Canadians have concentrated their assistance in particular geographical areas of Indonesia. For example, the West Germans have very extensive integrated area development projects in West Sumatra and East Kalimantan; the Australians have similar projects in West Kalimantan, NTT and Irian Jaya; and the Canadians in Lombok and Lampung.

To take advantage of the momentum gained under RE I, the Mission proposes to provide the RE II feasibility studies prepared for PLN to the ADB and World Bank and encourage

these institutions to pick up our efforts in Central Java. We also propose to assist the DGC by conducting feasibility studies as requested for the other bilateral donors mentioned above in the areas of their particular interest.

Since RE cooperatives are a new institution in Indonesia, we also may be requested to assign some of our AID veteran rural electrification consultants to assist the DGC to organize and train rural electrification cooperative management staff in these areas. The Mission estimates three person years as sufficient technical assistance for this transitional effort. The cost would be \$250,000.

7. Revised AID Grant Budget

Table 3
Revised Project Budget for Grant
(in US \$000s)

	<u>Grant Budget</u> <u>9/30/80</u>	<u>Amendment</u>	<u>Proposed</u> <u>Total</u>
A&E Team	3,250	2,750	6,000
OMT Team	2,100	1,250	3,350
Training	200	100	300
Productive Uses	210	250	460
Evaluation	50	-	50
Contingencies	190	400	590
Follow-on	-	250	250
	<u>6,000</u>	<u>5,000</u>	<u>11,000</u>
	=====	=====	=====

8. Issues Related to AID Inputs

Two issues were raised by AID/W in the correspondence concerning additional funding: rationale for switching the burden of some technical assistance costs from the GOI to AID; and the reason for grant funding, as opposed to loan funding, the additional technical assistance needs.

AID agreed to cover some of the costs previously assigned to the GOI when the source and origin of these costs changed from Indonesia to the United States, or more specifically to C.T. Main. The expediency of adding personnel to the existing

C.T. Main contract was too logical and the legal issue concerning a GOI contribution to a contract not obtained using GOI procurement procedures was too complicated. This substitution of some GOI counterpart with AID grant funds has not reduced the GOI counterpart contribution. The GOI has already committed itself to increased support for the additional technical assistance. It will also increase its counterpart contribution in the form of credit used in the productive uses program, and it will probably add \$5 million to the project for generators to cover cost overruns that the Canadian International Development Agency has incurred.

Only grant funding is acceptable since activities listed in the original grant agreement - supervision of construction and installation, and assistance in system organization, operations, and a productive use program - will not be completed before the original grant funds are disbursed. Without this grant amendment, AID's project obligations as described in the original grant agreement will not be fulfilled.

The additional funding described above is crucial. The Mission is now faced with materials arriving, design work finishing, construction beginning and the possibility of AID technical advisors leaving. Without the AID technical advisors to supervise, advise and instruct, the project outputs will not be met.

B. INCREASED COUNTERPART SUPPORT

1. Increased GOI Support

a. Logistical Support and Personnel

When it became impossible to find a local contractor to provide services to C.T. Main, the DGC agreed to increase its staff by six local engineers and four draftsmen; and provide the additional C.T. Main advisors assigned to the RE coop part of the project with office space, office equipment, and interpreter and secretarial services. At about the same time, the PLN agreed to supply the additional C.T. Main advisors with office space, office equipment, housing and utilities (outside Jakarta), furniture, transportation, interpreter and secretarial services, and vehicles. Further, the PLN has already committed itself to approximately \$30,000 in support of the Productive Uses Advisor, not budgeted in the Project Paper, and will have to incur another \$70,000 to support the additional advisors. The GOI costs incurred because of the additions in personnel and consultants are \$1,000,000.

b. Credit

The three outer island RE coops have decided to open up stores selling household appliances and productive electrical machinery. These retail outlets for coop members and the public will require debt financing. Based on the stock and store requirements developed by the Lombok RE coop, the credit requirements for the three proposed stores will be \$100,000. The credit is a direct result of the project, will come from a GOI state bank, and was not contemplated as counterpart at the project design stage.

c. Generators

The largest increase in GOI counterpart may be approximately \$5 million for generators. The original multi-donor effort called upon the Government of Canada (GOC) to purchase 12 large generators for 27 MWs of power for the three RE coops. Because of inflation, the GOI will only be able to supply six or seven large generators for 14 MWs of power. While the GOI has asked the GOC to find a solution to the additional funding need, it appears as if the additional power requirements will fall upon the GOI.

d. Fuel Storage

The GOI national oil company, PERTAMINA, will now be required to construct a diesel storage facility in the Luwu project area. This facility was not contemplated as part of the project, but is now seen as an essential element for the Luwu project. Cost of construction is \$100,000.

2. Revised Counterpart Budget

Table 4
Revised Counterpart Budget
(in US \$000s)

	<u>Counterpart Budget</u>	<u>Counterpart Increase</u>	<u>Total</u>
A&E Team	\$ 1,247	\$ 600	\$ 1,847
OMT Team	169	300	469
Productive Uses	84	100	184
Training	300	-	300
Evaluation	100	-	100
Credit	-	100	100
Generators	-	5,000	5,000
Fuel Storage	-	100	100
	<u>-----</u>	<u>-----</u>	<u>-----</u>
Total	\$ 1,900	\$ 6,200	\$ 8,100
	<u>=====</u>	<u>=====</u>	<u>=====</u>

PART IV. IMPLEMENTATION PLAN - SCHEDULE OF MAJOR EVENTS

<u>Date</u>	<u>Activity</u>
1977 August	Feasibility reports completed for 10 project sites.
1978 May	Loan Agreement signed.
August	NRECA OMT Contract signed.
September	C.T. Main A&E Contract signed.
October	Center line staking begins (PLN).
November	NRECA Team Leader arrives.
1979 1st Quarter	Begin construction of Klaten pilot project. Headquarters sites selected (RE coops).

<u>Date</u>	<u>Activity</u>
1979 2nd Quarter	Begin purchase of headquarter sites (PLN) Begin operation of Klaten pilot project. PLN and DGC complete Implementation Plans.
3rd Quarter	Center line staking begins (RE coops) Title obtained for Lombok and Luwu. PLN met CPs.
4th Quarter	IFBs issued for tools and equipment (PLN). DGC met CPs. Begin construction of Lombok demonstration project.
1980 1st Quarter	IFB issued for Conductor (PLN).
2nd Quarter	Survey and conduct soil testing for head-quarter sites (PLN). First delivery of poles. IFB issued for distribution materials for Luwu and Lampung. IFB issued for distribution hardware (PLN).
3rd Quarter	Center line staking completed (PLN). Center line staking completed for Luwu and Lampung. Begin operation of Lombok pilot project. IFBs issued for distribution material Lombok.
4th Quarter	Contracts let for headquarters sites preparations (PLN). Center line staking finished for Lombok. IFBs' issued for poles (RE coops). IFBs' issued for housewiring and meters PLN.
1981 1st Quarter	System design completed (PLN). Title obtained for Lampung headquarter's site. Contract let for site preparation and construction (RE coops). IFBs issued for housewiring for Lampung and Luwu.

<u>Date</u>	<u>Activity</u>
1981 2nd Quarter	Construction drawings completed (PLN). First delivery of tools and equipment (PLN). First delivery of conductor (PLN). IFB issued for housewiring for Lombok. Construction drawings completed (RE coops).
3rd Quarter	Begin clearing right of way; setting and framing of poles (PLN). First delivery of poles for Lampung, Luwu and Lombok. Warehouses completed (PLN). First delivery of hardware and materials (PLN).
4th Quarter	First delivery of distribution materials for Lampung and Luwu. Begin clearing right of way, setting and framing of poles for Lombok and Luwu. First testing and energization of the system (PLN). First delivery of housewiring (PLN).
1982 1st Quarter	Sites prepared, warehouses and headquarters completed (RE coops). First delivery of distribution materials for Lombok. Final delivery of distribution materials for Lampung and Luwu. Construction drawing completed for Lampung. Headquarters completed (PLN). Final delivery of tools (PLN).
2nd Quarter	All poles delivered (PLN). First delivery of tools (RE coops). Final delivery of distribution material for Lombok. Begin clearing right of way; setting and framing of poles for Lampung.
3rd Quarter	First delivery of housewiring (RE coops). Final delivery of poles (RE coops). First testing and energization of system (RE coops). Complete setting of poles (PLN).

<u>Date</u>	<u>Activity</u>
1982 4th Quarter	Final delivery of housewiring (RE coops). Final delivery of tools (RE coops). System completion for Luwu. Final delivery of hardware (PLN) Final delivery of conductor (PLN)
1983 1st Quarter	System completion for Lampung and Lombok. Final delivery of housewiring (PLN) System completion (PLN)
2nd Quarter	House connections in process; system operating.

PROJECT AUTHORIZATION

AMENDMENT

INDONESIA

Rural Electrification
Project No. 497-0267

1. The Rural Electrification Project for Indonesia was authorized on March 8, 1978. The Project was authorized on the basis of life-of-project funding in the amount of Thirty-Six Million United States Dollars (\$36,000,000) for a two-year period, which included Thirty Million United States Dollars (\$30,000,000) in loan funds and Six Million United States Dollars (\$6,000,000) in grant funds. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, that authorization is amended as follows:

a. The total planned obligations for the project are authorized in an amount not to exceed Forty-One Million United States Dollars (\$41,000,000), of which Thirty Million United States Dollars (\$30,000,000) is authorized in loan funds, and Eleven Million United States Dollars (\$11,000,000) is authorized in grant funds, with the additional funding provided hereby available for a two-year period from date of this amendment to the authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process to help in financing foreign exchange and local currency costs of the project.

2. The authorization referred to above remains in effect as hereby amended.

Clearances:

ASIA/PD:BBblackman
ASIA/DP:RHalligan
ASIA/ISPA:WFord
ASIA/TR:TArndt
GC/ASIA:HMorris

Date

3/12/81
3/13/81
3/13/81
3/12/81
3/13/81

Initial

[Signature]
[Signature]
[Signature]
DL for draft
by SET

Signature

Frederick W. Schick

March 13, 1981
Date

Jakarta, January 22, 1981

No. : 49 /SJ/1/81

Mr. Thomas C. Niblock
Director
USAID Mission to Indonesia
c/o American Embassy
Jakarta

Subject : Rural Electrification Project

Dear Mr. Niblock :

A review of project implementation and an analysis of the project budget indicates the need for additional grant funds for technical assistance and training. Some of this additional technical assistance needed has already been agreed to and budgeted for through amendment to the two technical assistance contracts. In addition, we have continued to provide necessary training by using funds originally planned for productive uses.

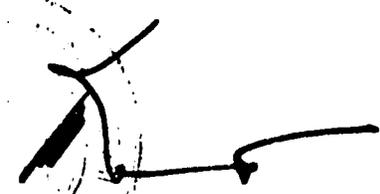
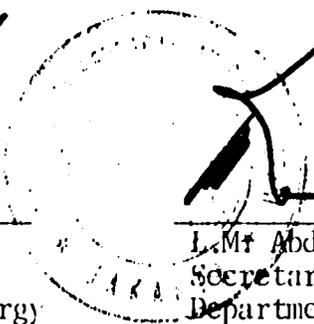
We understand that the funding for the already-signed contract amendments, for additional technical assistance and training and for the productive uses program will require a Grant Agreement Amendment for an additional five million US dollars (\$5,000,000). We therefore, request that you take the necessary action to provide this additional grant funding, which is necessary for successful completion of the Rural Electrification Project.

Our Government has already begun and will continue to provide the support services required for the increased technical assistance and training activities of the USAID Grant.

Sincerely yours,



Drs. Soetarno Sigit
★ Secretary General
Department of Mining and Energy



L. Mr. Abdulkadir
Secretary General
Department of Trade and
Cooperatives

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Annex C

Project Title & Number: Indonesia - Rural Electrification

Life of Project:
From FY 78 to FY 83
Total U.S. Funding \$ 42 million

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal:</p> <p>The broader objective to which this project contributes:</p> <p>Improved standard of living and increased productivity of rural population in ten selected areas of Indonesia.</p>	<p>Measures of Goal Achievement:</p> <p>Some of the following are expected to be present as OVI:</p> <ol style="list-style-type: none"> 1. Electric lights replacing kerosene in home and for street lights. 2. Markets, stores, homes, restaurants utilizing refrigeration and other appliances. 3. Small irrigation (electric pumps) projects increasing yields and allowing for multiple cropping. 4. Increased production from small industries and increased numbers of new rural industries. 5. New employment opportunities especially for women. 6. A slow down in rural migration to cities. 7. Correlation of home lighting and decrease in population growth rate. 8. Limited school and other public facilities utilized at night. 	<ol style="list-style-type: none"> 1. Cooperative, PLN and Government records, Min. of Agriculture records. Observation, research and special evaluations. 	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> 1. Rural electrification is part of an integrated rural development program defined and adopted by the GOI which includes agriculture research, extension, family planning, credit, marketing and rural roads. 2. Government policies encourage new enterprises. 3. Moderate inflation rate. 4. Government price, tax and import policies support rural development. 5. Farmers respond to economic incentives.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Indonesia - Rural Electrification

Life of Project:
From FY 78 to FY 83
Total U.S. Funding \$ 42 million

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose:</p> <p>The purpose of this project is to demonstrate that reliable electric power can be provided to the rural areas of Indonesia at a price which the majority of the people can afford through systems which are technically sound and financially viable and that the introduction of electricity to the selected areas will bring about a significant increase in production and improve the quality of life of the rural poor. A subsidiary purpose is to train a sufficient cadre of Indonesian experts in all phases of rural electrification so as to manage and expand their rural electric systems.</p>	<p>End of Project status:</p> <ol style="list-style-type: none"> 1. At least 50% of a combined population of 1.3 million people living in over 400 villages in seven areas of Central Java will be served 24 hrs/day from the PLN grid. 2. At least 50% of a combined population of 650 thousand people living in almost 200 villages in three outer island locations will be served 24 hrs/day by member owned and managed electric coops. 3. Nearly all the people living in all ten areas will benefit through such items as are listed as OVI for Goal achievement above. 4. A three phase backbone system expandable to serve additional residents in the area. 5. An active power usage program at each of the ten areas. 6. The existence at each site of a three to four hectare headquarters site complete with office space, warehouse, storage yard, maintenance facilities and as necessary staff housing. Coops will have generators. 7. Each system will have a fully trained and functioning management and operating staff to operate, maintain and expand their service. 8. Both PLN and the DGC will be fully capable of organizing financing, designing, procuring materials for, supervising construction and initial operation of rural electric systems. 	<ol style="list-style-type: none"> 1. GOY reports. 2. Field visitation and system inspection. 	<p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> 1. The central government will continue its commitment to the project and provide the necessary local support including funds, charters for the coops and other policy guidance. 2. That PLN will be able to reduce its construction costs and connection charges so that at least 50% of the people living in the target areas will be able to afford the service. 3. That financial arrangements will be made to pass on the AID loan terms to the local systems so as to make them financially viable. 4. That sufficient manpower will be made available capable of being trained for the jobs requiring technical skills.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Indonesia - Rural Electrification

Life of Project:
From FY 78 to FY 83
Total U.S. Funding \$42 million

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Detailed designs and material specifications. 2. Headquarter sites including office space, warehouse, storage yard maintenance, staff housing and for the outer island coops, generation plants. 3. Operating electric distribution system. 4. Internal housewiring including light fixtures, switches and convenience outlets. 5. Billing and collection system. 6. Training seminars and courses. 7. Train personnel. 8. Evaluation feedback. 	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> 1. Designs and specification for 10 systems, 7 in Central Java and 3 on the outer islands. 2. 10 headquarter sites of which 3 will have generation plants. 3. The ten systems will require an estimated 4,000 Km of primary and secondary lines, 2,400 Km of secondary underbuild 60,000 poles, 2,500 transformers and 238,000 kWh meters. 4. By PACD it is estimated that 195,000 consumers will have been provided with housewiring. A minimum package will consist of three light fixtures, three switches and one convenience outlet. 5. Approximately 35 courses and seminars. 6. Over 500 people trained including at least 100 at each coop, 20 at each PLN area and 60 project management staff from PLN, DGC, BAPPENAS and BRI. 7. One billing and collection system for the PLN utilities and a comparable system for each coop. 8. One baseline survey plus 4 annual surveys. 	<ol style="list-style-type: none"> 1. Reports completed. 2. NRECA, USAID, GOI records. 	<p>Assumptions for achieving output:</p> <ol style="list-style-type: none"> 1. The NRECA team with the help of PLN and the DGC staff will complete the feasibility studies for all systems. 2. The GOI will meet the CP's. 3. Contracts will be signed with the NRECA/NEA team and the Consultant. 4. Participant trainees will be made available. 5. Counterpart funds will be made available on a timely basis. 6. The materials will arrive on time, in good order and be properly distributed. 7. PLN and local contractors can construct the systems.

CITED A & E T.A. REQUIREMENTS (C.T. MAIN)

FED YM	NECESSARY PM FOR COMPLETION	1978			1979			1980			1981			1982									
		J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A
1	27	[Hatched bar from Jan 1978 to Dec 1978]																					
8	27	[Hatched bar from Jan 1978 to Dec 1978]																					
5.5	8	[Hatched bar from Jan 1980 to Dec 1980]																					
0	3	[Hatched bar from Jan 1981 to Dec 1981]																					
7	27	[Hatched bar from Jan 1978 to Dec 1978]																					
6.5	27	[Hatched bar from Jan 1978 to Dec 1978]																					
6	27	[Hatched bar from Jan 1978 to Dec 1978]																					
0)		[Hatched bar from Jan 1979 to Dec 1979]																					
1)21	27	[Hatched bar from Jan 1979 to Dec 1979]																					
0	15	[Hatched bar from Jan 1980 to Dec 1980]																					
8	16	[Hatched bar from Jan 1980 to Dec 1980]																					
8	27	[Hatched bar from Jan 1980 to Dec 1980]																					
4.5)		[Hatched bar from Jan 1979 to Dec 1979]																					
6)		[Hatched bar from Jan 1979 to Dec 1979]																					
5)18	27	[Hatched bar from Jan 1980 to Dec 1980]																					
6	6	[Hatched bar from Jan 1980 to Dec 1980]																					
2	27	[Hatched bar from Jan 1980 to Dec 1980]																					
0	24	[Hatched bar from Jan 1980 to Dec 1980]																					
4	20	[Hatched bar from Jan 1980 to Dec 1980]																					
8	27	[Hatched bar from Jan 1978 to Dec 1978]																					
6.5	7.5	[Hatched bar from Jan 1979 to Dec 1979]																					
3	27	[Hatched bar from Jan 1979 to Dec 1979]																					
1	13	[Hatched bar from Jan 1979 to Dec 1979]																					
2)		[Hatched bar from Jan 1978 to Dec 1978]																					
5)25	8.5	[Hatched bar from Jan 1979 to Dec 1979]																					
3	428																						

 USED PERSON-MONTHS
 PROPOSED ADDITIONAL PERSON-MONTHS
 REMAINING PERSON-MONTHS

BREAKDOWN OF ADDITIONAL TRAINING REQUIREMENTS

1. Rural Electrification Training:

A. International Air Travel: \$2,500 x 8 =	\$ 20,000
B. Domestic Air Travel, USA: 850 x 8 =	6,800
C. Per Diem: \$50 x 8 x 60 days =	24,000
D. Tuition: \$1,500 x 8 =	12,000
E. Insurance and Miscellaneous	<u>2,000</u>
Sub-total =	\$ 64,800

2. Pole Inspectors Seminar:

A. International Air Travel: 12 x 700 =	\$ 8,400
B. In-country Travel: 250 x 12 =	3,000
C. Per Diem: \$50 x 21 x 12 =	12,600
D. Tuition and Training Materials =	3,600
E. Insurance, Miscellaneous	<u>2,400</u>
Sub-total =	\$ 30,000

Total Training = \$ 94,800
=====

LOCATIONS OF PROJECT SITES



CENTRAL JAVA

ANNEX G

