

HYBRID PROGRAM FOR SUPPORT TO THE ELECTRIC SECTOR

(NI-0069)

EXECUTIVE SUMMARY

BORROWER AND GUARANTOR:	República de Nicaragua.
EXECUTING AGENCIES:	<ol style="list-style-type: none">1. For the investment project: Empresa Nicaragüense de Electricidad (ENEL), and the Comisión Nacional de Energía (CNE) for the Rural Electrification Program.2. For the fast disbursing program: Secretaría Ejecutiva de la Comisión Interministerial de Competitividad [Secretariat of the Joint Ministerial Commission on Competitiveness] (SECIC), through the Unidad de Reestructuración de la ENEL [ENEL Restructuring Unit] (URE)
AMOUNT AND SOURCE:	<ol style="list-style-type: none">1. For the investment project: IDB (FSO): US\$46.13 million Tentative co-financing: US\$ 2.50 million Local counterpart funding: US\$ 9.03 million Total: US\$57.66 million2. For the fast disbursing program: IDB (FSO): US\$30.0 million Total: US\$30.0 million
FINANCIAL TERMS AND CONDITIONS:	Amortization period: 40 years Disbursement period: 4 years and 30 months, respectively Interest rate: 1% for the first 10 years and 2% thereafter Inspection and supervision: 1.0% Credit fee: 0.5%
COMPONENTS AND OBJECTIVES:	The proposed hybrid program is composed of an investment project and a fast disbursing program. The investment project is mainly intended for electric power transmission works, an activity which remains under state authority, as well as the modernization of the Centro Nacional de Despacho de Carga [National Power Distribution Center] (CNDC). It also includes a small pilot component for rural electrification. The fast disbursing program will provide support to the Government of Nicaragua (GNI) in the process of restructuring and privatizing

distribution and generation companies resulting from the restructuring of the ENEL. The conditionality for each of the two components is independent, although they complement each other in terms of continued consolidation of the electric power sector reforms.

The objectives of the proposed hybrid program are as follows:

1. For the investment project: (i) improve the reliability and efficiency of electricity supply; (ii) expand access to electricity and prepare for future connection to the Central American Electric Interconnection System (SIEPAC); (iii) promote private sector participation; and (iv) carry out studies for rural electrification and implement the results in at least two communities not yet connected to the SIN network.

2. For the fast disbursing program: (i) Support the GNI in its efforts to restructure ENEL and to privatize and/or capitalize the distribution companies and generators created as a result of the restructuring; and (ii) provide the GNI with financing and support for ENEL to offset part of the rise in its operating costs in 1998 due to the El Niño phenomenon.

DESCRIPTION:

1. The investment project will include:

(i) rehabilitation and construction of transmission lines and substations and rehabilitation of the water system for the Nicaraguan Plant; (ii) purchase of maintenance equipment and tools, and replacement of protection systems on transmission lines; (iii) installation of metering equipment in the generating stations of the Sistema Interconectado Nacional [National Interconnection System] (SIN); (iv) interconnection of the Isla Ometepe electricity system with the SIN; (v) modernization of the CNDC and its communications system; and (vi) execution of a study for designing mechanisms to promote rural electrification projects, and selection of at least two communities in which to carry out such projects.

2. The fast disbursing program will consist of an operation to be disbursed in three tranches based on the achievement of specific targets relating to the privatization and/or capitalization of the power distribution companies and generators created as a result of the restructuring of the sector.

**ENVIRONMENTAL
AND SOCIAL REVIEW:**

The environmental impact studies carried out indicate that the proposed hybrid program is environmentally and socially viable, having basically positive effects in both areas. It is recommended that an environmental management and action plan be carried out in connection with the investment project (paragraph 3.18), along with environmental audits of the companies to be privatized (paragraph 3.20).

BENEFITS:

The investment project is given top priority because of the potential savings to be had by reducing electricity lost or unaccounted for, thereby improving the operations and financial position of ENEL and supporting modernization of the CNDC, and creating technical conditions with respect to metering and other controls that will enable the CNDC to administer a competitive electricity market. It will also prepare Nicaragua's electricity system for the start-up of the SIEPAC project, both from the standpoint of its participation in the regional electricity market and in terms of the system's infrastructure.

The fast disbursing program will play an essential role in facilitating participation by the private sector and the electric power distribution and generation segments, while at the same time giving continuity and support to the consolidation of electric power sector reforms initiated under the PRESP.

RISKS:

There are no significant risks inherent in the legal, institutional, technical or environmental aspects of the program. The main risk is that the divestment and privatization of ENEL may not be consolidated or completed soon enough to permit privatization during the present administration, or that INE may not be consolidated as a regulatory agency. These institutional and regulatory aspects could directly affect both the new organization of the sector resulting from the restructuring process and the Empresa Estatal de Transmisión (EET) to be created, inasmuch as the revenues for the latter's operations will come from fees for connection to and use of the transmission system and other services of the CNCD - fees which must be approved by the INE. To mitigate these risks, assistance will be provided for the GNI in executing the ENEL restructuring, and annual evaluation meetings will be held to review both the advances being made under the restructuring and regulatory process, and the progress of the investment project. The conditionality designed for the fast disbursing component requires specific

progress in the restructuring and privatization process which will minimize these risks. Another potential risk could arise from a failure to apply the Gradual Plan on a timely basis to eliminate distortions and the electric power rate structure and the cross-subsidies between various groups of consumers. To minimize this risk, the GNI has undertaken to maintain the average rate levels, which reflect the marginal long-term costs, and beginning in 1999, any cross-subsidy that is maintained will be reflected in a transparent way on the customers' bills. The policy matrix and the conditionality proposed for each tranche will permit monitoring of compliance with the Gradual Plan agreed upon for disbursements. Another potential risk involves the possibility that the co-financing to be provided by the Norwegian Agency for Development Cooperation (NORAD) for interconnection of the Isla Ometepe system with the SIN might not be forthcoming in a timely manner (see paragraph 3.12). Since the amount involved is relatively small and execution is to be over three years, it is expected that ENEL could eventually carry out the works using its own resources.

**ROLE OF THE
PROGRAM IN THE
BANK'S COUNTRY AND
SECTOR STRATEGY:**

The program is consistent with the Bank's strategy for Nicaragua which seeks to achieve sustained growth with equity by promoting private sector development and the resurgence of productive activities, as well as providing support to improve the reliability of the interconnected electricity system as a means of encouraging private sector participation in the effort to increase generating capacity, which is essential for revitalizing production. It is difficult to imagine new private investment in generating plants - without transferring all of the risk to a state enterprise - unless investors can be presented with an electricity network that meets the minimum requirements for reliability and has in place the means for administering and coordinating an open and competitive electricity market. This operation will support consolidation of the reforms being made to the electric power industry under the Programa de Reforma para las Empresas de Servicios Públicos (PRES-P).

**EXCEPTIONS TO
BANK POLICY:**

See the section on procurements below.

PROCUREMENT:

Current Bank policy will be applied for the procurement of goods and construction works. The minimum amounts for which procurements under the investment project will require international

competitive bidding will be: US\$300,000 for goods, US\$2 million for construction works, and US\$200,000 for consulting services (paragraph 3.11).

It is proposed that the equipment to replace the existing transmission lines be installed under direct contract (3.10).

In the case of the fast disbursing program, the Bank's new simplified procedures for sectoral loans will apply in this case in accordance with document GN-2001-2.

**POVERTY-REDUCTION
AND SOCIAL
CRITERIA:**

The proposed hybrid program does not qualify as a poverty-targeted program. However, the rural electrification and the Ometepe Island electric connection components will benefit poor population segments by virtue of their geographic location.

**SPECIAL
CONTRACTUAL
CONDITIONS:**

1. Conditions precedent to the first disbursement for the investment project:

- (a) Signature of the funds transfer agreement between the GNI and ENEL (paragraph 4.1).
- (b) Creation of the project executing unit for the investment component (paragraph 3.3).
- (c) Conditions precedent to the first disbursement of the rural electrification component:
 - (i) signature of the funds transfer agreement between the GNI and ENEL (paragraph 4.1).
 - (ii) placement in operation of the CNE, with budget for 1999 allocated and a project leader appointed (paragraph 4.4).

2. For the fast disbursing program: The contract must specify the conditions for the disbursement of each tranche laid down in the Policy Matrix (see Annex II-2).

I. FRAME OF REFERENCE

A. Macroeconomic climate

- 1.1 Economic performance during the first year of the administration which came to power in January 1997 was such that Nicaragua's GDP rose for the fourth straight year (recording 5% growth versus 4.5% in 1996), while inflation and the public sector deficit continued to fall. The structural reform program was advancing at the same time. However, the country continues to have an enormous external debt and suffers from deep-seated internal and external imbalances which make it difficult to sustain development.
- 1.2 In March 1998, the International Monetary Fund (IMF) approved a Letter of Intent and Economic Policy Memorandum for the second Enhanced Structural Adjustment Facility (ESAF II), for the equivalent of US\$85 million over a period of three years. Economic planning for the period 1998-2000 projects 5% annual growth in GDP, a drop in inflation to 5% by the year 2000, and an increase of US\$155 million in the country's reserves in 1998. The government is committed to undertaking a program of structural reforms which will enable it to eliminate the causes of the country's fiscal, monetary and external imbalances, and to create a regulatory and legal framework that will allow the private sector to lead the way to sustained growth.
- 1.3 Preliminary figures on macroeconomic performance during the first half of 1998 indicate that the government will meet the goals (pertaining to its international reserves and fiscal deficit) agreed with the IMF for the first and second quarters, despite delays in the disbursement of external cooperation, particularly by the donor agencies. The government is now predicting GDP growth of 6% (exceeding the target of 5% set with the IMF), thanks to increased construction activity and greater fiscal expenditures made possible by a rise in tax revenues. This in turn placed pressure on the inflation rate, which reached 10% in June (versus the goal of 8% for the year), as well as on the trade balance due to a sharp rise in imports.
- 1.4 The signing of ESAF II paved the way for meetings in April with the Consultative Group, which in turn led to the commitment of US\$1.8 billion in development support and made possible a reduction of US\$200 million in debt servicing charges due Paris Club creditors over the next three years. Nevertheless, the status of Nicaragua's external accounts is extremely fragile since the country remains largely dependent on foreign aid.
- 1.5 Indeed, Nicaragua's external sector is highly vulnerable in that it is carrying a large deficit not only in its trade account, but also in the nation's current account, while its foreign reserves are likewise on shaky ground. Although the country's exports are constantly rising, they have yet to reach the level where they can

fully offset the increase in imports due to economic resurgence and trade liberalization in Nicaragua. As a result, the trade deficit has been averaging 20% of GDP for the last three years. The situation is made even worse by the fact that as of June 1998, the country's net international reserves had fallen from their level in December 1997 and were no longer able to cover even two months' worth of merchandise imports.

- 1.6 Meanwhile, even though the country has made notable progress in managing its foreign debt, the latter remains three times as large as its GDP, and servicing this debt absorbed 33% of its exports of goods and services in 1997. These indicators underline the difficult status of its balance of payments. Its high rates of foreign indebtedness and level of poverty are enough to make Nicaragua eligible for a significant reduction in its foreign debt under the initiative created by the IMF and the World Bank under the heading of "highly Indebted Poor Countries (HIPC)".

B. Reforms to the electric power industry

- 1.7 **Institutional background.** Created in 1979, Nicaragua's power authority, the Instituto Nicaragüense de Energía (INE), combined the functions of regulator (implied) with those of policy maker and business manager for both the electricity subsector and the oil and gas industry until 1994. With the Bank's support under Loan 933/SF-NI for the Programa de Reforma para las Empresas de Servicios Públicos [public utilities reform program] (PRESP), separate companies were formed to operate oil and gas services and run the electricity subsector, with the INE serving as a regulatory agency, in temporary charge of energy policy. At the end of 1994, the Government of Nicaragua (GNI) issued a decree creating the Empresa Nicaragüense de Electricidad [Nicaraguan Electric Power Company] (ENEL) as a vertically-integrated commercial provider to operate the country's public electricity service beginning in January 1995.
- 1.8 The objective of the PRESP was to support the reform of public utilities in Nicaragua with a view to improving the efficiency and coverage of public services in support of economic recovery and the competitive position of the Nicaraguan economy. Specifically, the PRESP: (i) provides support for the restructuring of enterprises/ministries and the energy, telecommunications, water supply and sewerage sectors; and (ii) establishes a new legal/institutional framework in each of the subsectors indicated in order to encourage private sector participation and the sustainable development of resources. For the electricity subsector, the objectives are to: (i) establish a regulatory framework that will promote efficient and reliable provision of electric power at minimum cost; (ii) split the vertically integrated electric power company into separate companies, one to generate electricity and another for power transmission/distribution as an intermediate step towards restructuring the

sector; and (iii) set rates on the basis of economic factors (long-term marginal costs) and financial criteria.

- 1.9 Activities in the electricity subsector under the PRESP included support in drafting the Ley de la Industria Eléctrica [Electric Power Act] (LIE) and revision of the Act Establishing the INE, transforming the latter authority into the regulatory agency for the energy sector. The objectives of the PRESP do not include any reference to the privatization of existing assets.
- 1.10 The country's new administration has decided to make yet more extensive changes to Nicaragua's electricity sector. To this end it has drawn up a plan for dividing up ENEL both vertically and horizontally, as well as proceeding immediately with privatization/capitalization of the resulting generators and power distribution companies, beginning with privatization of distribution while maintaining state control of the transmission system and prohibiting cross-ownership. These more far-reaching reforms to the electricity industry have been incorporated into the new Act (LIE) passed by the Asamblea Nacional (AN) in March 1998 and taking effect as of April 23, 1998, the date of its publication in Nicaragua's official journal La Gaceta. Among other things, this law calls for the creation of a wholesale electric power market and the establishment of open access to distribution and transmission lines in order to facilitate the entry of new generators, with rates regulated according to use. The LIE also creates the Comisión Nacional de Energía [National Energy Board] (CNE), whose primary task is to formulate comprehensive objectives, policies, strategies and general guidelines for the energy sector, as well as proposing plans for its development. The CNE will also be responsible for carrying out rural electrification projects.
- 1.11 **Relationship between electricity sector reforms in Nicaragua and the Central American Electric Interconnection System (SIEPAC).** The objective of the SIEPAC project is to develop a Regional Electricity Market (MER). It is essential that the structure of Nicaragua's electric power industry be compatible with that of the MER since the creation of that market and efficient investment to expand the region's transmission capacity will require more efficient market structures and arrangements. Since the basic principle of the MER is to create market and ownership structures that enable buyers (distributors and large-scale consumers) to choose among suppliers - whether in their own country or elsewhere in the region - based on the best price offered, it is a practical necessity that transmission services be separated from generation and distribution. The plans drawn up by the present administration for restructuring Nicaragua's electricity industry are consistent with the recommendations for the MER.
- 1.12 **What Nicaragua's electricity industry will look like in three years.** Under the recently enacted LIE, preparatory studies are to

be carried out followed by restructuring of the present ENEL. This law requires that starting on April 23, 1998, and within a period of no more than 12 months thereafter, the companies resulting from the breakup of ENEL are to be duly incorporated in accordance with private law, even though under state ownership. The planning of technical and financial procedures, along with regulations governing the operations and administration of the wholesale market, will then be completed and the market itself organized. At this time also, privatization/capitalization of the resulting distribution companies and generators will be carried out. It is expected that these activities will take place over the next two years, so that by the end of the three-year period, a restructured electricity industry should be in place with private sector economic agents starting to engage in market activities.

- 1.13 The operation of the National Interconnection System (SIN) will be the responsibility of the National Power Distribution Center (CNDC), which is a branch of the State Power Transmission Company (EET). Among its other activities, the CNDC will direct operational planning under the SIN and be responsible for cost-effective operations and settling of accounts between agents. To provide for appropriate governance of the new structure in the subsector, the LIE specifies the creation of the Operations Council which will be charged with establishing and monitoring technical aspects so as to ensure that the overall operation of the SIN is safe, reliable and economical.

C. Current situation and future of the sector

- 1.14 **Characteristics of the energy sector.** Nicaragua's energy sector has for the most part made scant use of the country's natural resources: only 2% of known geothermal sources and 6% of its hydroelectric potential is being exploited, while the country remains heavily dependent on hydrocarbons (100% of which are imported) and wood. Per capita energy use is very low, and energy consumption has steadily risen per unit of value added in the national economy. The country's biomass, primarily fuelwood, is used to produce 58% of the primary energy consumed in Nicaragua since it is the only energy source available to the poorest segments of the population. Fully 93% of the rural population uses firewood, and only 56% of the total population has access to electricity.
- 1.15 **The electricity system.** The SIN supplies power to 56 substations over 326 km of 230-kV transmission lines, 860 km of 138-kV lines, and 631 km of 69-kV lines, serving a total of 185 towns, not including housing developments or small settlements which have been incorporated commercially into these towns. The SIN is interconnected with the electricity systems of Panama, Costa Rica, and Honduras via simple 230-kV links created between each pair of countries. As of December 1997, the total number of consumers served by the SIN was 416,000.

- 1.16 **Underinvestment in expansion and maintenance.** In the 10 years leading up to 1997, the only additions to the system's generating capacity have been one 35-MW geothermal unit (1989) and one 27-MW gas turbine (1992). Meanwhile, two 15-MW steam generators reached the end of their useful life and had to be shut down in the Managua plant. Nicaragua's hydroelectric power plants all date from the period 1964-1971, and the Bank has provided funds for rehabilitation of these stations under Loan 872/SF-NI. The Government of Sweden helped with the overhaul of the Nicaragua plant (100 MW), while the Government of Denmark provided financing to rehabilitate unit 3 of the Managua plant (45 MW). The most recent additions to the system include: a 30-MW private generating plant which began operation in April 1997 under a "take or pay" power purchase agreement (PPA) with ENEL, and a 40-MW gas turbine which came on-line in March 1998. ENEL has signed a PPA for 50 MW of power which was awarded under international competitive bidding with the support of the Bank's Private Sector Department (PRI), and which will take effect in April 1999. In addition, after weathering an appeal against direct award of contract, ENEL is in advanced negotiations to sign another 50-MW PPA for a barge generating plant.
- 1.17 No additions have been made to the transmission system, nor has it been maintained on an adequate and regular basis. The configuration of the main transmission network is the same as it was in 1982 when the interconnection with Costa Rica was placed in service. Switching devices that have already exceeded their useful life remain in service, and protection systems are obsolete and unreliable. This problem manifests itself in frequent breakdowns causing partial or total outages in the country, with the attendant damage to Nicaragua's economy.
- 1.18 **The system has no reserve capacity.** Maximum demand in 1998 is at 381 MW and although installed capacity is rated at 441 MW, effective available capacity is only 370 MW in the best of cases, which means that Nicaragua's electricity system is operating without reserve generation. The Momotombo geothermal station is producing power at a rate well below its installed capacity (around 15 MW versus rated capacity of 70 MW) owing to a lack of replacement wells. ^{1/} As a result, the breakdown of any generating unit results in rationing, particularly if it occurs in peak hours. Outages are less frequent than they would be if the country's electricity system were operating in isolation; the support it receives from the existing interconnection with

^{1/} ENEL is seeking to establish an alliance with private investors that will allow it to obtain the funds required to increase steam production at the Momotombo geothermal field and rehabilitate the electromechanical equipment in its generating plant.

neighboring countries is vital for reducing the need for rationing in Nicaragua.

- 1.19 **Impact of El Niño.** Nicaragua's energy crisis has been made worse by the phenomenon known as "El Niño", which considerably lowered the water level in Lake Apanás during the 1997 rainy season. The country's hydroelectric production capacity is dependent upon this lake, and the lowered level of operation at the end of the 1997 rainy period means that hydro generation in 1998 will be below average. This problem comes on top of the existing energy shortage and inability to meet demand for electricity in Nicaragua, as described above. Nor can the shortfall be made up by the other Central American countries interconnected with Nicaragua's electricity system, since they too have been affected by El Niño. It is now estimated that hydroelectric production for 1998 will be approximately 150 GWh lower than expected. Because of the lowered water level in the lake, the situation in 1998 is problematic, particularly during the first six months of the year. Rationing was necessary between January and June of 1998 to make up for a shortfall of some 20 GWh.
- 1.20 **The reliability of Nicaragua's electricity system is low.** In the case of the country's generating plant, this is due to the age of its equipment and lack of sufficient reserve capacity to permit proper maintenance and improve the availability of generator units. In the case of the transmission, subtransmission, and distribution system, it is because of the backlog of needed expansions and maintenance, unavailability of spare parts, the overloading of various installations, and lack of control equipment for supervision of the network. The proposed operation is designed to alleviate the problem of low reliability in the transmission system through the replacement of insulators and protection equipment, and by providing adequate maintenance materials and equipment.
- 1.21 **Rate levels.** The overall average rate per kWh rose from US\$0.0798 in 1984 to US\$0.094 in 1996, and then to US\$0.1004 in 1997, still slightly below the estimated long-term marginal cost of US\$0.1080. Since March 1997, the electricity rate has been adjusted by 1.5% per month to compensate for monetary slippage plus a small real increase, and starting in October a thermal factor has been applied to offset fluctuations in the cost of fuel. As a result of the negotiations between the GNI and IMF for the signature of ESAF II, on October 1, 1997, the rate was increased by 5% for all sectors except consumers using less than 200 kWh/month and for public lighting. This is in addition to maintaining the monthly increase of 1.5% for all sectors.
- 1.22 **Rate structure.** The current rate structure still contains substantial distortions which the present government plans to correct over a four-year period beginning in 1998. To do this, the GNI reached agreement with the Bank to include among the conditions

for the PRESP a step-by-step plan for adjusting the rate structure which, upon completion, will ensure that the rates applied at all consumer levels reflect the respective marginal cost, eliminating cross-subsidization between consumer groups - except for residential rates. In the latter case, overall average rates will cover the marginal cost upon completion of the plan, but customers consuming no more than 100 kWh/month will continue to be subsidized on grounds that such consumption represents a basic social need given current levels of poverty in the country. It should be noted that the step-by-step plan agreed with the Bank concentrates its efforts on the last two years, reflecting the GNI's expectation that its macroeconomic measures and agreements reached with the international community will reactivate the economy, creating the breathing space necessary to correct the rate structure.

- 1.23 **Financial position of ENEL.** ENEL's financial position continues to be weak. Although the company for the first time recorded a net profit, the amount (US\$6.2 million) was not enough to cover its investment needs and massive debt service bill. It is expected that plans for improving its commercial operation, including the reduction of power losses, increasing collections, and completing the renovation works currently under way in the distribution network, will alleviate ENEL's financial difficulties.
- 1.24 **Issues affecting the electricity subsector.** To summarize, the main issues are: (i) high electric power losses (both design losses and energy unaccounted for) which in 1997 accounted for 27% of net available power (in 1996 this same figure was 30%); (ii) long delays in bill collection, averaging 71 days in 1997 (versus 69 days in 1969); (iii) remaining distortions within the rate structure; (iv) lack of regular maintenance for generating plants and transmission and distribution networks; (v) underinvestment in the subsector for many years; (vi) the high costs set in contracts for the purchase of electricity; and (vii) the weak financial position of the company and persistent political influence with ENEL's management, which makes it difficult to improve the overall performance of the company. This set of difficulties is the after effect of the serious structural problems plaguing the sector over the past decade and the lack of sufficient investment. Although the enterprise's operational efficiency has been improved, this is a gradual process and additional efforts and investments are still needed. These should materialize with a more extensive restructuring of the sector and the participation of private investors in support of sustainable development, objectives that are supported by this program, as indicated further on.

D. The role of the proposed program

- 1.25 The present operation is being carried out within the context of a general reform of the electricity industry in which the transmission phase will be transformed into the centerpiece activity for

promoting competition among generators to supply the electric power demanded by consumers, including both distributor companies and major consumers. The existence of an adequate and reliable transmission network, equipped with the necessary computer, metering and communications systems, is essential for proper operation of an electric power market such as that sought with the reform of Nicaragua's electricity industry. With a view to accelerating and continuing to consolidate sectoral reform, the present operation will concentrate on transmission works and modernization of the CNDC, and help to both overcome part of the problems listed above, especially with the transmission works, and create conditions favorable to private sector participation by: (i) improving the capacity and reliability of the transmission network; (ii) adapting the CNDC to a market environment in which information from a variety of sources in separate segments of activity must be managed; and (iii) assisting in the restructuring of the sector to promote private sector investment in the electric power generation and distribution segments.

E. Consistency with the Bank's country policy for Nicaragua

- 1.26 The primary objective of the Bank's strategy for Nicaragua is to combine sustained growth with social justice, for which it will be necessary to maintain macroeconomic stability and consolidate the structural reforms under way. The methods proposed for carrying out this strategy include: 2/ reducing foreign debt, promoting the private sector and reactivating the productive sector, alleviating poverty and developing human resources, and optimizing management of the country's natural resources. The present operation is consistent with this strategy and the above methods inasmuch as it will help improve the reliability of the interconnected electricity system in order to promote private sector investment in expansion of the country's generation capacity, which is essential for reactivation of the productive sector. It seems unlikely that private investors will be willing to build generating stations unless they are shown an electricity network that meets the minimum requirements for reliability and clear, stable rules of play are defined. This operation will also help to consolidate the reforms and restructuring process currently underway in the electricity sector.

F. Experience of the Bank and other financing agencies

- 1.27 To date the Bank has approved three operations in Nicaragua's electricity sector for a total of US\$69.9 million. The first loan (436/SF-NI) for US\$16.5 million was approved on September 11, 1975. The second operation (421/OC-NI) for \$US34.4 million was approved on September 16, 1982. The third and most recent loan to the country's electricity sector (872/SF-NI), for US\$19 million, was

2/ See Nicaragua: Country Paper (CP). GN-1931-1. October 17, 1996.

approved on December 11, 1991, to finance works for rehabilitation of the hydroelectric system, upgrading of the distribution system in Managua, and a broad institutional strengthening component. All three have experienced delays in their execution, but have accomplished their original goals. The proposed operation relates to and is designed to reinforce: the PRESP (933/SF-NI), approved in November 1994 (see paragraphs 1.7 to 1.9) together with the parallel technical cooperation operation (ATN/SF-4724-NI); technical cooperation operation TC-94-07-04-1 to supplement the legal and regulatory frameworks of the energy, telecommunications, water supply and sewerage sectors, approved by the Multilateral Investment Fund in 1995 and currently being executed; and the new MIF technical cooperation operations TC-98-03-32-2 and TC-98-03-38-0 to support restructuring and privatization of ENEL, approved in August 1998.

II. THE PROGRAM

A. Components of the program

- 2.1 The proposed hybrid program consists of: (i) an investment project; and (ii) a fast disbursing program. The investment project is intended essentially for electric power transmission works, an activity still under state authority. The project will also seek to modernize the CNDC, which will form part of the State Transmission Enterprise and will also include a small pilot rural electrification component. The fast disbursing program will provide support to the GNI for the process of divestment, restructuring, and privatization of the distribution and generation companies resulting from the restructuring of the ENEL. The conditionality designed for each of the two components of the hybrid program is separate, although they complement each other in terms of continued consolidation of reform in the sector.

B. Program objectives

1. Investment project

- 2.2 The objectives for this component are to: (i) improve the reliability and efficiency of electricity supply; (ii) expand access to electric power and prepare for future connection to the SIEPAC network; (iii) improve the availability of Nicaragua's generating plant; (iv) promote private sector participation; and (v) carry out studies for rural electrification and apply the findings to at least two communities not yet connected to the SIN network.

2. Fast disbursing program

- 2.3 The objectives here are to: (i) support the Government of Nicaragua (GNI) in its efforts to restructure ENEL and to privatize and/or capitalize the distribution companies and generators created as a result of the restructuring; and (ii) provide general support for sector restructuring and financing for the GNI.

C. The investment project

1. Description of components

- 2.4 The components of the investment project include: (i) rehabilitation and construction of transmission lines and substations and rehabilitation of the water circulation system in the Nicaraguan Plant; (ii) purchase of maintenance equipment and tools, and replacement of protection systems on transmission lines; (iii) installation of metering equipment in the generating stations

of the SIN; and (iv) modernization of the CNDC and its communications system. 3/

- 2.5 A comprehensive study will be conducted to design mechanisms for the promotion of rural electrification projects. These mechanisms will seek above all to ensure the institutional, technical and financial sustainability of projects, for which purpose it will be necessary to obtain the commitment of beneficiary communities. Once the study has been carried out and approved by the Bank, at least two communities will be selected as sites for rural electrification projects, which may include hydroelectric micro-stations, photovoltaic systems for smaller communities, small diesel or wind/diesel-powered systems, and other forms of supplying electricity for rural populations.

2. Goals (Annex II-1, Logical Framework)

- 2.6 Executing the investment project will make it possible to begin increasing the reliability of the electricity supply beginning in the second half of 1999 by reducing the incidence of breakdowns in transmission lines by 50% and shortening service interruptions by up to 40% for those breakdowns that do occur. The expected results are explained below.

3. Results

- 2.7 According to the goals and results shown in the Logical Framework in Annex II-1, the main results of the investment project will begin to appear in the second half of 1999, and are briefly described below. Improvements to line equipment and substations will come on stream, including changes in insulation on 14 lines (comprising a total of 717 km of transmission lines), the replacement of 45 switching devices in 16 substations, and installation of 23 protection systems (equipped with break locators) on 14 transmission lines.
- 2.8 The Momotombo-León transmission line will be in operation, as will the new Ticuantepe substation and the underwater cable to Ometepe Island. The CNDC will be operating with new computers and improved communications systems, including the installation of fibre optics in the transmission line guard wires.
- 2.9 The water circulation system throughout Nicaragua's generating plants will be in operation following rehabilitation including the replacement of two of the four circulation pumps, pipes and

3/ A more detailed description, including the cost estimates for each component of the investment project, together with the economic evaluation, can be found in the document "Description, Cost Summary, and Economic Evaluation of the PRESE II Projects", available in the investment project technical files in RE2.

fittings for connections, and metering systems for measuring internal consumption of energy within each generating station.

- 2.10 At least two small communities not yet connected to the SIN electricity network will be have the means to promote and facilitate development of sustainable rural electrification projects.

4. Costs and financing

- 2.11 The total estimated cost of the investment project will be the equivalent of US\$57.66 million. This will include design and administration, direct costs, indirect costs, contingencies, escalation, concurrent and financial costs. Table II-1 following shows the breakdown of costs under this component:

<p align="center">Table II-1 ESTIMATED COSTS AND FINANCING PLAN (US\$ million equivalent)</p>					
CATEGORIES	IDB	COUNTERPART		TOTAL	%
		NORAD	ENEL		
1. DESIGN AND ADMINISTRATION	0.56	-	4.58	5.14	8.9
1.1 Administration and overhead	-	-	2.21	2.21	3.8
1.2 Design and supervision	0.56	-	2.38	2.93	5.1
2. DIRECT COSTS	37.31	2.50	2.20	42.01	72.9
2.1 Transmission	27.62	2.50	2.01	32.12	55.7
2.2 Modernization of CNDC & communications	8.70	-	-	8.70	15.1
2.3 Rehabilitation of water circulation	0.99	-	0.20	1.19	2.1
3. INDIRECT COSTS	0.20	-	0.90	1.10	1.9
3.1 Environmental and social impact	0.20	-	0.10	0.30	0.5
3.2 Acquisition of right-of-ways	-	-	0.80	0.80	1.4
4. CONCURRENT COSTS	4.00	-	-	4.00	6.9
4.1 Rural electrification	4.00	-	-	4.00	6.9
5. UNALLOCATED	3.60	-	-	3.60	6.2
5.1 Contingencies	2.40	-	-	2.40	4.2
5.2 Escalation	1.20	-	-	1.20	2.1
6. FINANCIAL COSTS	0.46	-	1.35	1.80	3.1
6.1 Interest	-	-	1.12	1.12	1.9
6.2 Credit fees	-	-	0.23	0.23	0.4
6.3 Inspection and supervision	0.46	-	-	0.46	0.8
TOTAL AMOUNT	46.13	2.50	9.03	57.66	100.0
PERCENTAGE	80.00	4.38	15.70	100.00	
<p>Note: Interest incurred for rural electrification expenditures during the execution period will be paid by the Government of Nicaragua.</p>					

a. Design and administration (US\$5,141,862)

- 2.12 **Administration and overhead (US\$2,208,900).** Includes incremental costs for personnel, together with other expenses incurred by ENEL and the project executing unit (PEU).
- 2.13 **Design and supervision (US\$2,932,962).** Includes on-site supervision and inspection of workmanship on major equipment and works, together with engineering services required by the PEU for design of the various works.

b. Direct costs (US\$42,012,600)

- 2.14 The project will have the following specific components: (i) upgrading of equipment in transmission lines and substations (US\$7,192,000), which will include increasing the grade of insulation on transmission lines and replacing power switches and protection relays; (ii) completion of the Momotombo-León 138-kV transmission line (US\$1,660,800) designed to connect the Momotombo plant (70 MW) to a secondary point of the SIN and increase the reliability of the SIN; (iii) rehabilitation of the Managua substation (US\$2,210,000) in order to reduce the likelihood of breakdowns in the SIN and a forced shutdown of the 45-MW unit 3 at the Managua plant; (iv) construction of the new 25-MVA Santo Domingo substation 4/ (US\$5,668,400) to take on load which is being served with low reliability and a high level of energy loss by the Oriental substation; (v) construction of the 75-MVA Ticuantepe substation (US\$9,407,800) to boost the supply of electricity to the city of Managua and interconnect the SIN to the regional transmission system; 5/ (vi) Ometepe-SIN electrical interconnection (US\$2,500,000) by means of a 24.9-kv underwater cable; (vii) modernization of the CNDC and its systems of communications (US\$8,700,000) to prepare the Center for the new conditions that will be imposed with the creation of a national and regional electricity market, and in order that it might interact smoothly with other power distribution centers; (viii) use of reactance compensation (US\$1,642,200) to improve the voltage profile of the SIN, boost reliability and reduce energy losses in transmission; (ix) special equipment and tools for line maintenance

-
- 4/ Owing to the concentration of generating capacity that could arise in the substation of the Nicaragua plant as a result of the entry of private generators (such as already occurred with AMFELS), and its strategic location, it may be necessary to replace the Santo Domingo substation with an upgrade and expansion of the Nicaragua plant substation, which will have to be economically and technically justified and agreed in advance with the Bank if appropriate.
- 5/ The Ticuantepe substation is intended to serve as the connection to the SIEPAC line. Until time it was assumed that the best point of connection for the SIEPAC project would be the Ticuantepe substation. However, the studies carried out for this purpose did not include in-depth analysis of national transmission networks interacting at the regional level. The study required to determine the reinforcement needed in each national network is currently being carried out under a Danish technical cooperation administered by the Bank. It is recommended that once the advanced electrical studies and preliminary designs have been completed by the consultant under that TC, which should occur by February 1999, this component be either confirmed between the borrower, executing unit and the Bank, or replaced by the substation and compensation resulting from those studies.

(US\$1,630,000) in order to be able to maintain the system's transmission lines more effectively; (x) rehabilitation of the water circulation system in the Nicaragua plant (US\$1,189,600) since the current system is unreliable, frequently forcing the plant to shut down; and (xi) metering equipment for the generating plants of the SIN (US\$211,800), including the replacement or installation of electric power meters to monitor internal consumption by the plants.

c. Indirect costs (US\$1,100,000)

- 2.15 **Environment and social impact (US\$300,000).** Includes the cost of support for the organization and environmental regulations of ENEL's Environmental and Social Unit (UAS), as well as the cost of equipping the UAS, issuing the Environmental Procedures Manuals (MPAs), conducting an on-site environmental audit of the existing Altagracia plant on Ometepe Island, to design an environmental restoration plan for the site after the plant is closed and the underwater cable is operating, and providing training programs on environmental topics.
- 2.16 **Purchase of land and rights-of-way (US\$800,000).** Includes payments for surface rights in areas along which the 138-kV Momotombo-León transmission line will pass, as well as sites where the Tecuantepe and Santo Domingo substations will be built.

d. Concurrent costs (US\$4,000,000)

- 2.17 **Rural electrification (US\$4,000,000).** Includes approximately US\$500,000 for an institutional and regulatory study for the design of financially and technically feasible electrification systems for small communities, plus implementation of these systems in at least two communities, with training to ensure sustainability. Based on past experience with this type of small project, the cost is estimated at US\$3.5 million equivalent.

e. Unallocated (US\$3,600,000)

- 2.18 The amount set aside for contingencies (US\$2,400,000) represents about 6.4% of the direct and indirect costs of the project. Provision for inflation (US\$1,200,000) was based on a US inflation index of 2.5%.

f. Financial costs of the investment project (US\$1,803,682)

- 2.19 These costs include: (i) interest during construction of US\$1,116,352, calculated in accordance with FSO conditions; (ii) credit fees totalling US\$230,632; and (iii) inspection and supervision fees of US\$456,698.

g. Total cost and sources of financing

- 2.20 The total cost of the project is the equivalent of US\$57.66 million, and will be financed in the following manner: (i) US\$46.13 million with Bank resources from the FSO, to be used in their entirety for the purchase of materials and equipment under all generation and transmission components of the program; the procurement of consultancy services, materials, and equipment installation under the rural electrification project; and the payment of inspection and supervision fees; (ii) US\$2.5 million provided by the Government of Norway through NORAD for execution of the Ometepe-SIN Electric Interconnection project; and (iii) US\$9.03 million to be contributed by ENEL/EET to cover project administration and design costs, assembly and construction of the 138-kV Momotombo-León line, installation of the new relays/fault locators, installing of meters in the generating plants under the SIN, installation of a pump for the water circulation system in the Nicaragua plant, and construction of the overhead equipment for the Ometepe-SIN electric interconnection project.

D. The fast disbursing program

1. Description of the program

- 2.21 The fast disbursing program consists of an operation in three tranches based on the achievement of specific targets relating to progress toward privatization and/or capitalization of the power distribution companies and generators created as a result of sector restructuring.

2. Conceptual design and support for development of the program

- 2.22 The Bank has been assisting the GNI with studies for the divestment of ENEL operations, both vertically and horizontally, and the design of a privatization strategy. A strategic planning consultant will be engaged in September 1998, and this phase of the program should be completed six months thereafter. These studies will be financed with the resources provided under the PRESP parallel TC operation ATN/SF-4724. In early August, to continue the privatization and/or capitalization process, the Donors Committee approved a parallel TC operation with the MIF - window 1 (TC-98-03-32-2 and TC-98-03-38-0). The total amount of this TC will be US\$3.5 million, of which approximately US\$1.9 million corresponds to local counterpart contribution. 6/ This TC will finance other assistance designed to complete the process, including consultants to provide support for the GNI, the investment bank, as well as consultants to advise on legal matters,

6/ Specific details on this TC operation, and draft terms of reference for the principal consultants, can be found in the RE2 files.

the environment, valuation of assets and the training component for local officials.

3. Expected results

- 2.23 The general schedule of activities for this process, as agreed initially with the government, indicates that it will take between 18 and 24 months to complete the restructuring of the companies, reckoned from the date the strategic planning consultant is hired. The sequence of events planned by the GNI will see the privatization of distribution systems first, followed by the power generation systems. The exact order will have to await decisions to be taken by the GNI after it receives the recommendations concerning the division of the sector and the method of privatization recommended by the strategy consultant, due around March 1999. It is expected that a call for bids under the privatization of distribution scheme can be issued in the second half of 1999, and that privatization itself can take place at the start of the year 2000. The next step will be to begin requesting bids from power generators as soon as the sale of the distribution system is completed.
- 2.24 The proposed program has been designed for disbursement in three tranches, conditional upon the achievement of specific targets such as approval and determination by the GNI of the strategy and method for carrying out the process, entering into contract with the investment bank, submitting the initial report, issuing the memorandum of information, privatizing the electric power distribution system, and calling for bids on the generation. The specific targets and conditionality for each tranche are described in the Policy Matrix for the program contained in Annex II-2. The Policy Letter is provided in Annex II-3, and Chapter III describes the conditionality.

4. Scale, financing and disbursements under the program

- 2.25 The amount proposed for the fast disbursing loan is US\$30.0 million, to be drawn from the FSO. This amount is suggested on the basis of two factors: first, the country's foreign debt requirements in view of the difficulties with its external accounts (see Chapter I); and second, the potential impact of the draught brought on by El Niño, which is expected to reduce hydroelectric production by approximately 150 GWh in 1998 as a result of the drop in water level in Lake Apanás. Based on these factors, it is estimated that the cost overruns incurred by the company in 1998 due to adverse affects on power generation and greater fuel and energy costs (even after taking into account the additional income from the thermal factor and rate increases) will be on the order of US\$8.0 million, which amount - it is suggested - should be channelled to ENEL by the GNI.

- 2.26 It is proposed that the loan be split into three tranches of US\$10 million each. The first of these tranches is expected to be disbursed in the third quarter of 1998 once the Bank approves the operation; the second tranche is due to be disbursed in the second half of 1999; and the third tranche, midway through the year 2000.

III. EXECUTION OF THE PROGRAM

A. Special aspects

- 3.1 The present ENEL is to be divided both vertically and horizontally into a number of separate companies. This program will be executed during the transition necessary for consolidation of the reforms and formation of the companies produced by this restructuring, for which reason ENEL's current organization is expected to execute the investment project on a transitional basis under the project execution plan. The bulk of the works projects to be financed (described in Chapter II) are for the transmission system and modernization of the CNDC, and will form part of the new EET's assets upon completion.

B. Execution of the investment project

1. The executing agency

- 3.2 ENEL will act temporarily as executing agency for the investment project, creating a PEU within its Transmission Division to take on this role.
- 3.3 ENEL must name an Executive Director with experience in the electric power sector to head the PEU, and is required to obtain the Bank's nonobjection to this appointment. Creation of the PEU within ENEL's Transmission Division, along with the company's commitment to the subsequent transfer of this unit to the EET, will be conditions precedent to the first disbursement under the investment project. These conditions will also include a requirement that the PEU be created in accordance with the organizational and functional plan and staffing agreed with the Bank.
- 3.4 Short-term consulting services will be required to assist with execution of the investment project. Specifically, a specialized consultant will be necessary to supervise the CNDC modernization works, and another expert will be required to review the bidding conditions for acquisition of the equipment needed for rehabilitation of the water circulation system of the Nicaragua plant. These consultants will have to be hired in advance of the respective bidding competitions.
- 3.5 The rural electrification component will be carried out by the CNE (see paragraph 4.4).

2. Status of preparations for the investment project

- 3.6 The technical specifications and cost estimates for components involving the purchase of equipment and materials have been

documented. Feasibility studies have been drawn up for the Ticuantepe (see footnotes 4 and 5 to paragraph 2.15) and Santo Domingo substations, as well as the reactance compensation component. Similarly, the feasibility study for modernization of the CNDC has been completed and a consultant hired to prepare the respective bidding conditions for the equipment required. A feasibility study for the underwater cable project is under way and, this being a highly specialized area, the same consultant is expected to produce the pertinent bidding conditions.

- 3.7 The first phase of the rural electrification component will consist of a comprehensive study (see paragraph 2.5), including the design of the mechanisms and a commitment to self-sustainability from the communities in which rural electrification projects are to be carried out. Disbursements for the second phase (execution of the projects) will be authorized after the Bank has approved the results of the first phase.

3. Method of operation

- 3.8 The investment project will be executed by contracting operations under the main program headings, such as procurement of equipment and materials for upgrading and maintenance of transmission lines and substations, installation of equipment for substations and reactance compensation, and modernization of the CNDC. The respective contracts will be let through international competitive bidding.
- 3.9 The ENEL/EET, acting through the PEU, will be responsible for the design, supervision and administration of the investment project, supported by consultants and ENEL's Environmental Unit.

4. Works performed on force account

- 3.10 The replacement of equipment to upgrade lines and substations will be performed by ENEL's own staff. These activities are routinely carried out by the experienced personnel of the company's work gangs. The estimated cost of these works is US\$600,000. Moreover, this same type of work has been satisfactorily performed in similar fashion under loan 872/SF-NI. An exception to the International Public Bidding procedure, as provided for in Bank policies, and the use of direct contracting for these works is therefore recommended.

5. Procurement of goods and services

- 3.11 The Bank's current policies governing procurement of goods, works, and consulting services will be applied. The thresholds for requiring international public bidding on operations under the investment project are as follows: US\$300,000 for procurement of goods, US\$2 million for works, and US\$200,000 for consulting

services. A procurement schedule showing the timing of the most important bidding competitions is presented in Annex III-1.

6. Cofinancing

- 3.12 NORAD officials have indicated the agency's interest in co-financing the interconnection of Ometepe Island with the SIN and are awaiting completion of a feasibility study - expected in September 1998 - before making its final decision. In the event this source is not forthcoming, the EET/ENEL is expected to have sufficient resources to carry out these works since the amount required is relatively modest and the work is to be performed over three years.

7. Schedule of expenditures

- 3.13 The estimated execution and disbursement period for the investment project is four years, which allows sufficient time to conduct bidding, purchase materials, carry out construction works, deliver and install equipment, and obtain final acceptance. The investment schedule based on this project timetable is presented in Table III-1.

TABLE III-1 Investment Schedule (US\$ million)						
	1999	2000	2001	2002	TOTAL	PERCENT
IDB	8.12	20.15	14.70	3.16	46.13	80.8
ENEL	1.60	4.0	2.90	0.53	9.03	15.7
NORAD	0.60	1.10	0.80	-	2.50	4.3
TOTAL	10.32	25.25	18.4	3.69	57.66	100
PERCENTAGE %	17.90	43.79	31.91	6.40	100	

8. Operations and maintenance

- 3.14 An existing specialized unit within the Transmission Division will be responsible for operation and maintenance of new facilities and those rehabilitated under this investment project. ENEL has trained personnel in sufficient numbers to carry out the maintenance work. In the past, maintenance has not been performed on a timely basis, but this was mainly due to budget constraints. This operation is expected to improve the level and quality of upkeep on transmission lines and substations to the point where some routine maintenance work may be carried out without removing equipment from service.

9. Land and easements

- 3.15 The project to complete the 40-km long, 138-kV transmission line between Momotombo and León will require obtaining the necessary easement which is not expected to cause any difficulty. In any case, the legal mechanisms are at hand for appropriation of property required for a public purpose, if need be. One of the conditions precedent to inviting bids on these works will be that ENEL/EET must show evidence that all necessary easements have been obtained for the line. The purchase of land for the Ticuantepe and Santo Domingo substations is already under way. Prior to calling for bids on these works, ENEL/EET must provide evidence that the land for the substations has been already acquired.

10. Environmental and social impact

(i) The investment project

- 3.16 Since this project consists primarily of purchasing equipment to be installed in existing structures, its environmental and social impact will be minor and can be controlled by taking the necessary precautions during planning and construction of the works.
- 3.17 Laying the underwater cable should entail no significant environmental damage owing to the low voltage at which the cable will operate (24.9 kV) and the weak electrical current used. Nor is the cable itself likely to be damaged by local conditions due to the benign environment (freshwater lake, no currents, sandy bottom) in which the project will be carried out. In fact, this component will have a positive environmental and social impact by eliminating the risk of fuels spills in Lake Nicaragua and promoting economic development among the island's population.
- 3.18 The environmental and social impact report (ESIR) for the investment project proposes an environmental management and action plan which includes the following activities to be carried out in conjunction with the investment project:
- a. Institutional strengthening of ENEL's existing environmental unit including specialized training for its personnel and the provision of equipment for their use (computer hardware and software, monitoring equipment and a vehicle). These measures are intended to ensure better monitoring of the investment project and compliance with the environmental measures.
 - b. Continuation at the same time of activities in support of the INE's Environmental Protection Department (DCA), which is endeavoring to develop regulatory agencies to oversee Nicaragua's public services, with MIF financing.

- c. Adoption of the recommendations made in the MPAs as guidelines for the works to be carried out on transmission lines and substations. The Manuals, which were prepared during execution of Loan 933/SF-NI and will have to be made effective for the present program, should include instructions for the handling and disposal of oil containing PCB in existing facilities. The use of this insulating material must be banned in all new equipment.
 - d. Promoting greater emphasis on occupational health and safety within ENEL through staff training and development, and requesting that bidding conditions include a provision requiring suppliers to train ENEL personnel in the operation and maintenance of vehicles, equipment and tools purchased with loan resources.
 - e. Inserting in the annual review a provision requiring assessment of compliance with the measures set out in the environmental management plan of action drawn up for the investment project, to be carried out by the Project Team in cooperation with the DCA (INE) and ENEL.
 - f. Carrying out an environmental audit of the site of the Altagracia plant for purposes of designing a plan to clean up the environment after the shutdown of the plant once the cable comes on line and is supplying Ometepe Island with electricity.
- 3.19 The necessary financing for carrying out the above-mentioned mitigation measures has been included in the investment project in accordance with the cost estimate contained in the environmental and social management and action plan (PAGAS) in the ESIR.

(ii) The fast disbursing program

- 3.20 At its meeting of May 8, 1998, the Committee on Environment and Social Impact (CESI) considered the program for restructuring of the subsector, which is receiving support from the MIF under a TC, recommending an environmental audit of the companies to be privatized. The funds required for this purpose have been included in the TC in question.

C. Execution of the fast disbursing program

- 3.21 The executing agency under the fast disbursing program will be the Secretaría Ejecutiva de la Comisión Interministerial de Competitividad [Secretariat of the Joint Ministerial Commission] (SECIC), through the URE in accordance with the execution plan presented further on. Use of the Bank loan resources will be controlled entirely by the borrower, through the intermediary of the Banco Central de Nicaragua (BCN).

1. Institutional framework for execution of the program

- 3.22 The GNI issued Executive Decree 16-98 (published in La Gaceta on March 12, 1998) establishing the basic organizational framework for supervision and coordination of privatization strategies and programs for allowing private sector participation in the operation of public utilities. The structure approved comprises: (i) the Joint Ministerial Committee on Competition (CIC) which has seven members: five ministers, the President of the Central Bank, and the Economic Adviser to the Office of the President; and (ii) the SECIC. Also forming part of this structure is ENEL's Unidad de Reestructuración [Restructuring Unit] (URE).
- 3.23 The CIC is responsible for supervising, coordinating, and ensuring the consistency of privatization policies and strategies among the various sectors as well as private sector participation in the infrastructure services. The CIC, through the SECIC, established the timetable for restructuring of the ENEL and the privatization and/or capitalization of the enterprises resulting from this process.
- 3.24 The SECIC, which is headed by an Executive Secretary appointed by the President of Nicaragua, is responsible for overseeing execution, supervision and enforcement of the CIC's rulings. For the moment, this body has only the Executive Secretary and one administrative assistant.
- 3.25 The SECIC is expected to require the technical support of at least two consultants: one with expertise in regulatory matters and restructuring, and another with experience in the electricity subsector. This assistance has been included among the consultancies to be receiving MIF technical cooperation financing. The basic organizational structure of the SECIC, its operating budget for 1998, its draft budget for 1999.

2. The executing agency for the restructuring program

- 3.26 The third organizational level corresponds to the URE, which is responsible for carrying out the actual restructuring and privatization of ENEL - under the supervision of the SECIC and in accordance with the mandates of the CIC. The URE is being transferred to separate facilities outside of ENEL but continues to be funded under the ENEL's budget - a situation which could give rise to a conflict of interest in carrying out the restructuring process. To minimize this risk, the GNI adopted Executive Decree 53-98 in August 1998, ratifying the creation of the URE and authorizing funding of its operating budget by the ENEL. SECIC has also clarified that the URE is placed under its authority.
- 3.27 The URE began operations in late 1997, and the organization is currently made up of an Executive Director, two technical assistants, an attorney and secretarial personnel. The Board of

Directors of ENEL has approved the basic organizational structure of the URE and the 1998 operating budget.

- 3.28 For purposes of strengthening the proposed organization of the URE, an agreement has been reached with the GNI under which an individual principal adviser will be provided from the start to assist in the process. This adviser has already been hired and began work in July 1998.
- 3.29 This organization, strengthened as described and with support from the consultants hired for the divestment and privatization studies, is deemed adequate for the restructuring process. The Bank will follow this process will by means of annual project monitoring meetings, as indicated in Chapter IV.

3. Execution of the restructuring studies

- 3.30 Restructuring of the electricity subsector will receive Bank support in the form of MIF technical cooperation financing plus the TC resources available under operation ATN/SF-4724. Recruitment of the strategic planning consultant (phase one) is well under way and the contract should be finalized by September 1998. By the end of this stage (i.e. in six months), the consultants' proposal and recommendation concerning how to divide up the company will be received, along with the proposed strategies for privatization and/or capitalization of the resulting companies. At that point, the GNI must decide which strategy to adopt and how to continue the process.
- 3.31 After that phase is completed, the restructuring process will continue. In the next phase, a contract will be signed with the investment bank and the companies formed from the various segments of ENEL will be duly constituted, their assets inventoried and their organizational structure determined. The initial "teaser" release will be issued through the investment bank, followed by an information brochure sent to potential private investors with details on the privatization process, on the companies where GNI wishes to encourage private investment, and on the investment modality. The power distribution system, and subsequently the generation system, will then be offered for sale.

4. Conditions for the disbursements

- 3.32 The conditions set for the disbursement of each of the proposed tranches are set out in the Policy Matrix in Annex II-2. Those common to all three tranches include the requirements: (i) that macroeconomic performance be consistent with the objectives of the program; and (ii) that electricity rate levels and structure are consistent with the amounts agreed to in the Step-by-Step Plan (see paragraph 1.22).

5. Disbursement procedure

- 3.33 The resources of the loan for the fast disbursing program will be used to finance the total cost, in foreign exchange, of eligible goods imported from Bank member countries. The Bank's new simplified procedures for sector loans will apply in this case in accordance with document GN-2001-2. Disbursements will be made upon request from the borrower, accompanied by evidence of compliance with the contractual conditions agreed to.
- 3.34 The BCN is responsible for keeping the accounting books and preparing the disbursement requests. The borrower will submit a simple request under which the Bank will disburse the loan resources for use by the borrower. The loan resources must be deposited in a separate account. The Bank will require the borrower to maintain proper records of the funds disbursed from the loan; and the Bank reserves the right to require the borrower to provide audited reports on the disbursed funds.

D. Program administration

1. Inspection, supervision and monitoring of the program

- 3.35 These tasks will be carried out by the Bank's Country Office in Nicaragua in conjunction with the annual meetings described in Chapter IV. The sectoral specialist in that office has been assigned to spend an average of 10 weeks per year on these tasks, which is compatible with that official's current workload. Execution of the investment project will also be coordinated with other programs being executed by donor countries.

2. Ex post evaluation of the program

- 3.36 In consultation with the borrower, the executing agency decided not to include an ex post evaluation as part of the activities of the investment project, the rural electrification project, or the fast disbursing program. The aim of the fast disbursing program is to consolidate still further the electric power sector reforms initiated with the PRESP, focusing this time on support for the specific objective of greater private sector participation in the enterprises resulting from restructuring of the sector. This reflects the suggestions contained in the report from EVO (Document RE-228) that continuous support be maintained for reformed processes to ensure their continuing implementation. General information on the sector will be available should it become necessary to evaluate the program's operations and economic impact after completion.

3. General audit of the program

- 3.37 ENEL will hire an independent accounting firm for submission of ENEL's financial statements and those of the investment project during its execution. The CNE will submit audited statements for the rural electrification program in the course of its execution.

IV. BORROWER AND EXECUTING AGENCY

A. The borrower

- 4.1 The borrower and guarantor will be the Republic of Nicaragua, which will transfer resources for execution of the investment project to ENEL by way of a loan, and under financial conditions equivalent to those for the Bank's ordinary capital. The differential will enable the GNI to create a local counterpart fund for projects financed by the Bank. The funds for the rural electrification project will be transferred by the GNI to the CNE under the same FSO conditions that apply to the Bank loan. **As a condition precedent to the first disbursement for the investment program, the borrower must submit a duly signed separate funds transfer agreement between ENEL and CNE for each component, containing the text agreed to in advance with the Bank.**

B. The executing agencies

- 4.2 ENEL will act as the executing agency for the investment project. The rural electrification project will be executed by the CNE and the fast disbursing program by the SECIC through the URE. The BCN will serve as intermediary for use of the resources.

1. Legal framework of the executing agencies

- 4.3 ENEL is a state-owned commercial enterprise created under Executive Decree No. 46-94 on November 1, 1994. At present, ENEL holds a monopoly for the distribution of electricity in Nicaragua, subject to regulation by the INE, the regulatory agency established by law for the electricity subsector. The structure of the company is currently in transition and will undergo substantial changes when the restructuring process is completed and the electricity subsector has been divided both vertically and horizontally.
- 4.4 The National Energy Commission (CNE) has been created under the LIE to act as an interagency body reporting to the executive branch. The CNE will be composed of officials from the Executive Office of the President of the Republic, the Ministry of Economic Affairs and the INE, as well as two representatives of civil society. The CNE will operate under a full-time Executive Secretary, supported by such professional and support staff as are necessary to carry out its functions. The members of the CNE and its Executive Secretariat were appointed by Executive Decree No. 170-98 of June 1998. Funds for the CNE's operation will be allocated under Nicaragua's general revenue budget. **As conditions precedent to the first disbursement under the rural electrification project, the GNI must appropriate the CNE's operating budget for 1999 and appoint a Project Leader satisfactory to the Bank.**

- 4.5 With respect to the SECIC and the URE, the legal framework and its institutional organization are described in detail in Chapter III, paragraphs 3.22 to 3.29.

C. Financial history of the ENEL

- 4.6 In 1994, the economic/financial position of what was then the INE was plagued by cost overruns -brought on by greater in increased fuel consumption for thermoelectric generation- plus revenue losses due to the frequent rationing of power - both caused by the draught which the country was experiencing. Added to this were structural and administrative problems, a sizeable backlog (95 days) in the collection of accounts receivable from electricity sales, and a high level of energy lost or unaccounted for (28%). The government responded by providing INE with financial support to cover its cash deficit and service its domestic and foreign debt, all at a cost of approximately US\$14.0 million that year alone.
- 4.7 It was at this juncture that the Electric Power Company of Nicaragua (ENEL) was created and began operating. A short-term management plan was drawn up to evaluate the new company's initial operations within the context of the PRESP reform program.
- 4.8 The principal components of this management plan were as follows: (i) controlling and reducing electricity losses; (ii) reducing delays in the collection of accounts receivable; (iii) implementing a new rate structure to keep rates from falling in real terms; and (iv) freeing budget administration from its reliance on government infusions - so as to ensure balanced cash flow, efficient management of working capital, curtailment of investments, tightened control of operating expenses, and financial and operational parameters and indicators.
- 4.9 A comprehensive evaluation of the management plan during the period 1995-1997 shows improvement in the company's business management and strengthened commercial and other operations. Performance relative to the plan's indicators has been uneven and partial, and additional effort will be needed to improve the commercial management of ENEL. It is expected that this objective will be gradually achieved once the restructuring of the sector has been completed and the electricity distribution system has been privatized and/or capitalized.
- 4.10 The indicators for ENEL's management plan reveal the following:
- a. Electricity lost and unaccounted for rose to 29.6% in 1995, and 29.9% in 1996, well above the target of 27% set under the management plan. In 1997, total average losses fell to 27%, reversing the upward trend.

- b. Progress on the accounts receivable has been reasonable, with collection delays falling from 95 days at the end of 1994 to 71 days in 1996 and 73 days in 1997.
 - c. The average rate in 1997 was US\$0.1004/kWh, which is slightly less than the long-run marginal cost, estimated at US\$0.1080/kWh. Major distortions persist in the country's electricity rates, which it is hoped will be gradually eliminated under the four-year plan that has been agreed with the Bank in the framework of the PRESP, as described in Chapter I (paragraph 1.22).
 - d. ENEL achieved balanced budgets in 1996 and 1997, without depending on transfers from the federal government. However, the balance in cash flow was secured primarily by restricting new investment, cutting back on maintenance of existing plant, as well as through short-term financing.
 - e. ENEL's planned investment program for 1997 was only carried out in part, because of the company's budget constraints and the failure to secure certain loans. This has led to the postponement of investments, especially in transmission and distribution works, and in programs for the rehabilitation and maintenance of existing plants.
- 4.11 In 1996, the company succeeded in reversing its overall negative earnings, recording a profit of US\$6.2 million. In 1997, the cost structure of operations has begun to undergo major changes as private generators come on line and fuel consumption (bunker and diesel) rises. Owing to these changes, operating costs for energy and fuel purchases in 1997 are on the order of 60% of total costs, versus 43% in 1995 and 47% in 1996. As a result of this, and thanks to the reduction in hydroelectric generation and additional purchases of thermal energy, especially from neighboring countries, the overall results for 1997 showed a net loss of around US\$7.7 million. To offset this deficit, the company was allowed to boost rates by 5% beginning in October 1997 and the regulatory agency granted authorization for application of the thermal factor 7/ which represented an additional increase of some 5% in sales revenues. By adopting these measures, postponing certain investments, and making use of short-term financing, the company managed to maintain balanced cash flow in 1997 without having to depend on transfers from government.
- 4.12 The financial situation of the company continues to be weak because of changes in the structure of generation costs resulting from

7/ Emergency measure by which the regulatory agency (INE) grants ENEL authorization to recover addition costs due to fuel consumption and energy purchases above the level of average hydrogenerating capacity with normal water levels.

greater consumer use of fuel, the impact of the drought in 1998, and substantial electric power losses, with heavy reliance on short-term financing. Combined with its long-term debt picture, this represents a huge financial burden for the company equivalent to approximately 37% of internally generated funds in 1997. The probability of improvement in the short term will depend primarily on ENEL's ability to achieve improvements in its operating efficiency, particularly in reducing electricity losses, shortening the lag in accounts receivable, and improving client services. It will also depend on the price conditions obtained for the addition of new capacity with third parties, changes in the price of fuel, and the potential impact of phenomena that have nothing to do with company management, such as El Niño.

D. Short-term financial projections for ENEL

- 4.13 ENEL's financial projections for 1998 take account of the potential impact of El Niño, which in August 1997 began to affect water levels in Lake Apanás, upon which the country's hydroelectric generating capacity depends. This situation led the company to reprogram its energy distribution for 1998, which was reviewed with the Bank; restructure its planned generating structure to replace hydrogeneration capacity with energy generated by gas turbines; and increase the amount of private sector and Central American energy purchases. On the basis of its revised planning, it is estimated that hydroelectric production will be reduced by approximately 150 GWh in 1998.
- 4.14 The results of medium-term financial projections show that by 2000, at current electricity rates and under average hydroelectric generation conditions, ENEL can balance its cash flow and start reducing its short-term debt. Internally generated funds will be sufficient to cover debt servicing. However, during the period 1998-1999, the company's liquidity will continue to be restricted by short-term debt, with a financial deficit in those years of around US\$6 million and US\$2.5 million, respectively, in which the impact of a roughly 150-GWh reduction in hydroelectric power production in 1998 played a significant role, as explained in paragraph 2.25).
- 4.15 Given ENEL's weakened financial position, it is recommended that the company's financial and operational development, as well as progress in restructuring and privatizing the subsector, be carefully monitored during program execution so that problems can be evaluated and corrected as quickly as possible. To this end, it is further recommended that a clause be inserted in the contract stipulating that during the execution of this program annual meetings will be held to evaluate the progress of the restructuring program, including the investment project. The first meeting would be held within six months following signature of the loan contract with the Bank. For purposes of the planning and evaluation to be carried out in these meetings, a series of indicators of operating

and financial efficiency have been drawn up for ENEL, based on its remaining a vertically integrated company. These indicators are presented in Table IV-1 below.

TABLE IV-1 INDICATORS OF ENEL'S OPERATING AND FINANCIAL EFFICIENCY			
INDICATORS	1997 (actual)	1998	1999
a. Debt (long-term debt to assets)	0.5	1.0	1.0
b. Debt servicing coverage (times)	2.7	1.5	1.5
c. Contribution to investment (%)	19	25	10
d. Operating margin (%)	22	20	20
e. Sale accounts receivable (days)	73	72	70
f. Collection level (%)	83	85	85
g. Electric power losses (%)	27	25	23
h. GWh sold per employee	493	547	585
i. Average annual rate (US\$/kWh)	0.1004	0.1080	0.1080

4.16 For the evaluation meetings, the borrower (acting through the respective executing agency) must present:

- a. For the investment project and in the case of the ENEL: (i) the approved budget for the current year; (ii) financial projections covering at least five years, together with a description and breakdown showing the assumptions on which it is based; (iii) an analysis of progress with collections and accounts receivable; (iv) an analysis of progress under the program for reducing energy losses; (v) progress in respect of the indicators above; (vi) progress under the investment project; and (vii) progress in implementing the environmental management plan of action. In the case of the CNE, a progress report for the rural electrification studies; and
- b. For the fast disbursing program, the borrower must report on the status of activities under the approved timetable, action taken to correct any irregularities arising during the process, and progress achieved in setting up the EET and placing it in operation.

E. EET Financial projections

4.17 The EET will be established as a result of the restructuring process faced by the electricity subsector and will require a period of time in which to consolidate its operations. Pursuant to

the provisions of LIE 27, the EET will be constituted as a corporation under private law, even though it is state owned.

- 4.18 The financial projections for the EET are based on projected energy demand in the subsector and the recently updated expansion plan. The company's projections were prepared on the basis of a preliminary allocation of assets and liabilities according to the accounting records kept by ENEL; an estimate of operating and maintenance costs based on the separate accounts kept by what is now ENEL's Transmission Division; and the current investment and investment financing plan. These projections cover a period of six years. Table IV-2 provides a summary of the main results.

TABLE IV-2 EET - SUMMARIZED FINANCIAL PERFORMANCE AND CASH FLOW STATEMENTS (US\$ million)							
PERFORMANCE	1999 (a)	2000	2001	2002	2003	2004	TOTAL PERIOD 99-04
Energy transmitted (GWh)	931	2,009	2,142	2,259	2,396	2,533	12,270
Average rate (US cents/kWh)	1.0	1.0	1.0	1.0	1.0	1.0	
Gross income	9.3	20.1	21.4	22.6	24.0	25.3	122.6
Operating costs	5.5	8.2	8.8	10.0	11.5	12.1	56.1
Net operating income	3.8	11.9	12.6	12.6	12.5	13.2	66.5
Interest and other	2.8	5.0	4.8	4.5	4.8	4.5	26.3
Net profit	1.0	6.9	7.8	8.1	7.7	8.7	40.2
CASH FLOW							
Internal generation of funds	7.1	15.6	16.6	17.5	18.6	19.9	95.3
Loans	7.4	20.2	14.7	4.3	1.7	7.7	56.0
TOTAL RECEIPTS	14.5	35.8	31.3	21.8	20.3	27.6	151.4
Debt service	4.7	4.8	5.4	5.2	5.7	6.0	31.8
Investment	8.4	27.5	20.7	7.5	6.1	13.8	84.0
Taxes	0.4	2.3	2.6	2.7	2.7	3.0	13.7
Other uses	1.0	1.2	2.6	6.4	5.8	4.8	21.8
TOTAL OUTLAYS	14.5	35.8	31.3	21.8	20.3	27.6	151.4

(a) Figures at mid-year.

- 4.19 The transmission company's projected earnings statement suggests that income from electricity transmission and from the CNDC will be sufficient to cover operating and financial costs, pay income tax and remain in the black. The cash-flow statement indicates that internally generated funds will be sufficient to service current

debt and meet other financial obligations satisfactorily. The indicators of debt, solvency, and operating ratios are all adequate.

- 4.20 A sensitivity analysis performed on the above results indicates that the medium-term break-even point for cash flow can be achieved with an average tariff of US\$0.07 cents/kWh, which is within the range typical for transmission activities and used in recent evaluations of other companies in the region. This rate would enable the company to meet all its financial obligation, and deliver positive operational performance.

F. Evaluations of the EET's institutional and financial performance

- 4.21 Since restructuring of the subsector is already under way, and given that the EET has only now been formally created and will take some time to solidify its operations, it is proposed that the joint meetings described in paragraph 4.15 be held annually for the purpose of monitoring the EET's financial and institutional situation, and updating its short- and medium-term outlook. To this end, an initial table of institutional and financial performance indicators has been drawn up, setting targets to be reviewed annually at the joint meetings. These performance indicators have been prepared on the basis of the EET's preliminary financial projections. They will be readjusted after the GNI decides how ENEL will be divided, which is expected by the completion of the first stage of the divestment studies), after the resulting companies have been created, and after the INE, as regulatory agency for the energy sector, defines the indicators for monitoring the operating efficiency of the transmission company, including the transition period agreed between INE and the enterprise. The principal indicators are presented in Table IV-3 below.

TABLE IV-3
INDICATORS OF THE EET'S INSTITUTIONAL AND FINANCIAL PERFORMANCE

Category	1999	2000	2001	2002	2003
Energy losses in transmission (%)	5.0	4.9	4.8	4.7	4.6
Index of forced shutdowns of 230-kV lines	15	14	13	12	12
Index of forced shutdowns of 138-kV lines	14	13	13	12	12
Index of forced shutdowns of 69-kV lines	17	16	15	15	14
Energy unaccounted for due to breakdowns in transmission (MWh)	600	500	300	300	300
Number of transmission employees per km of 230-kV, 138-kV and 69-kV line	22	20	18	16	14
Average income (US\$/kW of demand)	47	47	48	48	48
Average income (UScents/kWh net available energy)	1.0	1.0	1.0	1.0	1.0
Operating costs - operating ratio (% of total income)	59	41	41	45	48
Administration costs (% of income)	8.5	6.5	6.5	6.4	6.1
Expenses for maintenance, materials, and supplies (% of operating expenses)	9.8	10	10	10	10
Operating margin (%)	41	59	59	55	52
Debt service coverage (times)	1.4	2.8	2.6	2.9	2.9
Rate of return (%)	6.0	18.0	18.0	13.0	10.0
Debt (long-term liabilities/net worth)	1.0	1.2	1.2	1.1	0.9
Average collection period (days)	30	30	30	30	30

V. FEASIBILITY AND RISKS

A. Technical feasibility

- 5.1 The plans for the components of the program were drawn up by ENEL with the help of consultants. The specifications for equipment and materials that will be purchased to rehabilitate, upgrade and maintain the transmission lines and substations are based on experience with existing facilities. Each component was evaluated and optimized separately.
- 5.2 For the components requiring studies, specialized consultants have been hired and work is well advanced. These components include updating the study for expansion of the transmission system, the study for laying a cable for interconnection of Ometepe Island, and the study for modernization of the CNDC and its communications system. The technical studies as well as actual performance in terms of the overloads and frequent shutdowns due to aging equipment, fully justify the investment project from a technical standpoint.

B. Institutional feasibility

a. for the investment project

- 5.3 The investment project has a successful precedent in Loan 872/SF-NI, a program to rehabilitate the electric power system approved in 1991. As in that operation, an executing unit will be set up in view of the restructuring of ENEL. The experience gained in the earlier operation, and the strengthening of ENEL as a specialized electric power company, will guarantee the institutional feasibility of the investment project.

b. for the fast-disbursing program

- 5.4 Regarding the institutional organization approved by the GNI for restructuring the ENEL, it is believed that, with Bank and MIF support combined with the regular monitoring meetings, the planned institutional structure will be adequate to carry out the process.

C. Economic feasibility

- 5.5 The economic analysis of the investment project shows it to be feasible for the following reasons:
 - a. The economic internal rate of return for each component is 12% or higher.
 - b. The cost-benefit indicators are high.
 - c. The program is solid, in that its economic indicators remain high even when the main variables are changed significantly.

- d. The start-up of each project is carefully timed, since delays would result in substantial losses.
- 5.6 Table V-1 shows the cost-benefit numbers for each of the investment project components. The detailed calculations for each project are available in RE2's program Technical Archives.

TABLE V-1 RESULTS OF ECONOMIC ANALYSIS OF PROJECT			
Description	Investment (US\$)	IRR (%)	IC/B012% (%)
1. Upgrading equipment in lines and substations	8.06	12.87	94.50
2. Completion of 138-kV Momotombo-León line	1.7	>40	17.30
3. Rehabilitation of Managua substation	2.51	>40	12.10
4. Santo Domingo substation	6.37	30.25	50.60
5. Ticuantepe substation	10.9	13.77	87.90
6. Modernization of CNDC and its communication systems	9.78	>40	10.80
7. Reactance compensation	1.87	17.61	77.10
8. Water circulation in Nicaragua plant	1.37	>40	3.00
9. Improvement of metering in SIN generating plants	0.24	>40	9.22
10. Ometepe-SIN electric power interconnection	3.12	17.35	68.40

- 5.7 ENEL will be provided with tools for economic analysis by way of a consultancy hired to assist with preparation of the investment project financed by the Bank. These tools will allow the company to quantify the savings realized through increased reliability (reduction of energy unaccounted for in each individual component), greater availability of equipment, and reduced electric power losses. In the case of the two substations and capacitive reactance compensation, it has been verified that they form part of the minimum cost plan for expansion of the national transmission system.

D. Financial viability

- 5.8 The GNI and ENEL have made great efforts to improve the financial position of the company and reverse losses in the electricity sector by applying the 5% rate hike beginning in October 1997, adding the thermal factor in the last quarter of 1997, and maintaining the real value of the tariff by applying a monthly adjustment in 1998.
- 5.9 Financial deficits will be recorded for 1998 and 1999, to an extent that will depend on the particular circumstances prevailing at that time, particularly in 1998. This situation will be remedied in

part with the support provided under the fast disbursing program, but the company's liquidity will continue to be very tight. Once the restructuring process has been completed, and given the financial parameters implicit in the sector's reorganization, the future financial status of ENEL and the new enterprises resulting from the restructuring should improve and become more sustainable as the private sector enters in to management on a more efficient basis.

- 5.10 The initial prospective analysis of the EET indicates its financial position should be sound. The income from this company's operations will be sufficient to cover operating costs, financing charges, and income tax and show a net profit. This, combined with sound performance indicators, should enable the company to cover the financial obligations connected with the preliminary allocation of assets and liabilities as it begins operations, as well as new obligations arising out of investment project financing, and meet its local counterpart commitment for the project.

E. Environmental and social feasibility

- 5.11 The environmental impact studies carried out show that the program is environmentally and socially viable, and will have primarily positive effects. The projects to rehabilitate and upgrade transmission lines and substations will include the management and proper disposal of discarded materials and equipment. Bidding conditions for the procurement of maintenance equipment will require training in the use of the equipment in accordance with industrial safety standards.
- 5.12 As a result of the environmental studies carried out for the program, the need to reroute the Momotombo-León transmission line to avoid damaging the protected area of the Pilas-El Hoyo volcanic complex was pointed out and agreed with ENEL.
- 5.13 Provision has been made to ensure that the potential environmental effects of the program's components are taken into account during the design stage and kept to acceptable levels during construction and operation. In order to ensure direct supervision of compliance, it is recommended that during the project's first supervisory meeting, ENEL show evidence that it has strengthened the organization of the Environmental and Social Unit (UAS), created under Loan 872/SF-NI, within the framework of Nicaragua's environmental institutions (MARENA and INE). Financial support for strengthening the UAS has been included in the proposed program.
- 5.14 Steps have been taken to ensure that the MIF's technical cooperation will include the necessary resources for carrying out an environmental audit of companies privatized as a result of the divestment studies.

F. Benefits and risks

- 5.15 The investment project is of high priority given the economies it will generate by reducing energy losses, which will in turn improve the ENEL's operating and financial efficiency.
- 5.16 The program will play a decisive role in encouraging private sector participation in the power generation and distribution system, reducing losses, and creating technical conditions with respect to metering and other controls that will enable the CNDC to administer a competitive electricity market.
- 5.17 The main risks of the fast disbursing program are that: (i) the GNI might decide not to proceed with privatization and/or capitalization of the resulting companies, or not to proceed soon enough to complete the process during the present administration because of delays in its approval; (ii) the institutional structures set up to supervise (SECIC), and execute (URE) the process might not have sufficient capacity to do so; or (iii) application of the Gradual Plan to eliminate distortions and cross subsidies between the electricity consumer groups might be postponed.
- 5.18 To minimize the first risk, the GNI has indicated its commitment to restructuring the electric power sector by approving the creation of agencies to direct the. It is now well along in the process of hiring the strategic advisor. At the same time, the Electricity Industry Act (LIE) has set a deadline of 12 months from the date of its publication (April 1998) for division of the present ENEL into separate companies. As part of its oversight function, the Bank will hold regular meetings to evaluate progress under the program. To minimize the second risk, the SECIC and URE will receive technical support in the form of specialized consultancies to strengthen their capacity for regulating and restructuring the sector. The release of funds under the fast disbursing component is conditioned on concrete progress in restructuring the sector, which will also help to reduce these risks. To reduce the third risk, the GNI has undertaken to ensure that average rates overall will reflect the marginal long-term cost, and that starting in 1999, any cross subsidies that are maintained will be reflected in a transparent way on the customers' bills. The policy matrix and the conditionality proposed for each tranche will permit monitoring of compliance with the Gradual Plan agreed upon for disbursements.
- 5.19 The investment component of the program entails no serious hazards. The main risk lies in possible failure to complete the division and privatization of ENEL, and to strengthen the INE in its function as a regulatory agency by ensuring that it is made up of experts in the energy sector not susceptible to removal for political reasons. These institutional and regulatory aspects would directly affect the EET since this company's revenues (from which it provide local counterpart funding for the program) will come from fees for

connection to and use of the transmission system and services of the CNCD - fees which must be approved by the INE. To lessen this risk, assistance will be provided for the GNI in executing the reforms, and annual evaluation meetings will be held to evaluate progress. Another potential risk involves the possibility that the co-financing which is to be provided by the Norwegian Agency for Development Cooperation (NORAD) for interconnection of the Isla Ometepe system with the SIN (see paragraph 3.12), and which is presently awaiting the completion of feasibility studies due in September 1998, might not be made forthcoming in a timely manner (see paragraph 3.12). Since the amount involved is relatively small and execution is to be over three years, it is expected that ENEL/EET could eventually carry out the works using their own resources, thus lowering this risk.

**LOGICAL FRAMEWORK
HYBRID PROGRAM FOR SUPPORT TO THE ELECTRIC SECTOR
(NI-0069)**

OBJECTIVES	TARGETS (INDICATORS)	MEANS OF VERIFICATION	KEY ASSUMPTIONS
ing standards by providing more reliable ctric power service and ensuring greater			
reliability and capacity of the SIN.	The number of failures per 100 km of SIN transmission lines will be reduced by 50% over the period 1998-2000. The total time lost to interruption of service in the transmission system will be reduced by 40% during the period 1998-2000.	Performance reports on ENEL. Verification in the field.	Political resolve on the part of government and the company the program through to completion.
ENI in its restructuring of ENEL and ial support for the company.	Information memorandum published at least for sale of the distribution system (May 1999). Privatization of the distribution companies (January 2000).	Progress in preparing the studies under the specialized consultancies in accordance with the agreed timetable.	Same as above.
system	138-kV lines between Momotombo and León in operation in May 1999. Managua substation rehabilitated by May 2000 with three bays with 138kV lines, a 138kV transformation line, and a 138/13, 8, 40 MVA transformer. Installation of a new 25 MVA distribution substation in Santo Domingo by April 2000. Construction of the Ticuantepe substation and installation of 1 75-MVA autotransformer at the Ticuantepe substation by August 2001. Installation of the 10 km 24.9 kV underwater cable for interconnection of Ometepe Island with the SIN by the second quarter of the year 2000. Installation of protection relays equipped with fault locators on 230-kV and 138-kV lines. Installation of 60 MVar of reactance capacity in the system. Installation of fiber optics in guard wire according to results of test in the period 1998-2000.	Technical inspection reports.	The land required is purchased appropriated on a timely basis. No strikes occur affecting delivery of materials and equipment.

OBJECTIVES	TARGETS (INDICATORS)	MEANS OF VERIFICATION	KEY ASSUMPTION
of the CNDC and its communications	Installation of a modern computer system, communication system and 7 remote terminal units in the CNDC by February 2001.		
to the cooling system of the Nicaragua ation of meters in generating stations.	Installation of water circulations system in the Nicaragua plant and two of the four circulation pumps by June 1999.	Technical inspection reports.	
L both vertically and horizontally.	Create a state transmission company and establish companies resulting from the divestment of power generation and distribution systems by March 1999.	Approval by the GNI for the establishment of companies resulting from the divestment of ENEL operations.	Political will of the GNI to co forward with the process.
1: aterials for transmission lines. transmission line. sformers. ubstation. pecialized vehicles for maintenance of ols. omputer hardware and software. omputer equipment. TRs. pecialized meters. onnel.	See detailed project proposal.	Progress reports and accounting records of the project executing unit.	
2: aterials and equipment for rehabilitation of pecialized meters for plants.	See detailed budget for the project.	Progress reports and accounting records of the project executing unit.	
egy and mechanism for the privatization	Approval of the privatization strategy by the GNI (March 1999).	Official communication from the GNI.	Completion of the divestment consultants financed from the
contract with the investment bank.	Issue of the information memorandum by June 1999. International call for bids for the privatization of electric power distribution by October 1999..	Information memorandum published. Bidding documents	

NICARAGUA: HYBRID PROGRAM FOR SUPPORT TO THE ELECTRIC SECTOR
(NI-0069)
POLICY MATRIX

POLICIES TO BE TAKEN AFTER				POLICIES	ACTIONS TAKEN	ACTIONS TO BE TAKEN AFTER		
Second Tranche				Objective	Actions to take	Submission to the Board		
Third Tranche				Objective	Actions to take	Submission to the Board		
Macroeconomic performance consistent with the program's objectives.				Consistency of the program's with the macroeconomic	Letters of agreement submitted by the IMF's Enhanced Structural Adjustment Facility (ESAF II).	A policy letter to the Bank's satisfaction has been received. Macroeconomic performance consistent with the program's objectives.		
Macroeconomic performance consistent with the program's objectives.				Consistency of the program's with the macroeconomic	Letters of agreement submitted by the IMF's Enhanced Structural Adjustment Facility (ESAF II).	A policy letter to the Bank's satisfaction has been received. Macroeconomic performance consistent with the program's objectives.		
The transmission comparison functioning as a corporate directs the operation of the and obtains its revenues from transmission rates approved by the INE.				Electricity Industry Act (LIE), Amended Organic Law of the INE, and Regulations to the LIE are all in force.	The following have been hired: individual consultant to the URE and consulting firm (strategy adviser) for the studies on segmenting and the strategy for privatizing and/or capitalizing ENEL.	Using international bidding methods, call for tenders for privatization of electricity distribution companies, indicating dates for submission and opening of bids and financial offers.		
Close of sales for stocks of distribution companies purposes of privatization capitalization.				Electricity Industry Act (LIE), Amended Organic Law of the INE, and Regulations to the LIE are all in force.	The following have been hired: individual consultant to the URE and consulting firm (strategy adviser) for the studies on segmenting and the strategy for privatizing and/or capitalizing ENEL.	Using international bidding methods, call for tenders for privatization of electricity distribution companies, indicating dates for submission and opening of bids and financial offers.		
Using international bidding methods, call for tenders for privatization of the electricity generating companies, indicating dates for submission and opening of bids and financial offers.				Electricity Industry Act (LIE), Amended Organic Law of the INE, and Regulations to the LIE are all in force.	The following have been hired: individual consultant to the URE and consulting firm (strategy adviser) for the studies on segmenting and the strategy for privatizing and/or capitalizing ENEL.	Using international bidding methods, call for tenders for privatization of electricity distribution companies, indicating dates for submission and opening of bids and financial offers.		

CITY SECTOR

[illegible]

**Ministry of Development, Industry and Trade
Office of the Minister**

Managua, September 7, 1998
GOBID-171-0998

Mr. Enrique V. Iglesias
President
Inter-American Development Bank (IDB)
Washington, D.C. 20577

Sir:

Our administration took office in January 1997 with the firm intention to carry out a continuous transformation of Nicaragua into an open and internationally competitive economy, based on sustainable development with social equity. We have continued and intensified a series of reforms in various sectors of the economy and implemented adjustment programs with the support of the international community. As you know, since the early 1990's Nicaragua has been making great efforts to achieve sustainable development. The initial measures focused on stabilizing prices, correcting critical macro-economic imbalances, and restoring the private sector to its proper place in the economy. We turned next to reform of the trade and financial sectors to permit the entry of private banks as financial intermediaries. Work has now begun on reform of the agricultural sector, land titling, and the elimination of major distortions in our financial markets.

In November 1994, the IDB approved a reform program for public service enterprises (PRESP) requested by our government to improve the coverage and efficiency of electric power, telecommunications, carbon fuels, water supply, and sewerage services. This reform sought to separate the operational, regulatory, and indicative planning functions and establish a new legal and institutional framework as a basis for private sector participation in each of these areas.

In March 1998, the International Monetary Fund (IMF) approved the Letter of Intention and Economic Policy Memorandum for the Second Strengthened Structural Adjustment Program (ESAF II) for Nicaragua, with a duration of three years and an amount equivalent to US\$85 million. Signature of ESAF II led to meetings with the consultative group - where US\$1.8 billion were committed for rural development support - and with the Club of Paris, which agreed to a US\$200 million reduction in debt servicing over the next three years. Such advances notwithstanding, the country's external account situation remains fragile and we continue to depend, to a great extent, on external assistance.

In the specific case of the electric power sector, the Government of Nicaragua is advancing further with the reforms already initiated, with IDB support, to restructure key areas as a means of accelerating private sector participation in the operation and administration of electric utilities. In that regard, the following points are particularly noteworthy:

1. Under the reform program initiated with the PRESP, the Nicaraguan Energy Institute (INE) has been restructured. Enterprises in the carbon fuels and electric power sectors are now independent, with the INE retaining its regulatory and (temporarily) energy policy functions. In late 1994, the government established the Nicaraguan Electric Power Enterprise (ENEL), a commercial, vertically integrated electric utility that began operations in January 1995.
2. The Government has decided to proceed with vertical and horizontal divestment of ENEL operations with a rapid transition towards private sector participation in the resulting distribution and generation companies. Energy transmission operations will remain under state ownership, and ownership across sectors will be prohibited. This reform has been incorporated in the Electric Power Act (LIE), approved by the National Assembly and enacted on April 23, 1998.
3. The LIE provides that within a maximum period of 12 months the divested ENEL operations should be set up as corporations subject to private law, even when they are state-owned. The technical and economic regulations and procedures for the operation and administration of the wholesale electric power market, and the organization of that market, must now be designed, and the private sector must be brought into the resulting distribution and generation enterprises. These activities are expected to last about two years, so we should see a restructured electric power sector initiating market activities with private sector participants in the near future, with government agencies maintaining authority for policy formulation and regulation.
4. By Executive Decree 16-98, published in the official journal *La Gaceta* on March 12, 1998, the government has approved the basic organization for supervising and coordinating privatization strategies and arrangements for private sector participation in infrastructure services. The structure consists of three levels. (i) The first level consists of an Inter-Ministerial Committee on Competitiveness (CIC), whose functions are to supervise, coordinate, and ensure the consistency of privatization strategies and policies in the various sectors, and to organize private sector participation in infrastructure service. (ii) The second level is the Executive Secretariat of CIC (SECIC), responsible for implementation, supervision, and follow-up on the Committee's resolutions. (iii) With regard to the electric power sector, the third level consists of the ENEL Restructuring Unit (URE), under the supervision

of the SEGIC, which is responsible for directing the work of restructuring and privatizing ENEL in accordance with the mandates issued by the CIC. This structure has the government's full support and will remain in place throughout the entire process of restructuring and privatizing the electric power sector.

5. A timetable for this process was designed and presented to the IDB (see letter GOBID-133-07-98) as part of the formalities for the MIF Technical Cooperation operation (MIF/AT-193) and provides an indication of the Government's firm commitment to completing the process. The sequence set out in the timetable is to privatize the distribution companies first, and then the generation companies. The final arrangements will be made by our government in due course based on the studies and recommendations of the Strategic Advisor concerning divestment alternatives and the privatization strategy. We expect they will be completed by March 1999. The consulting contract for the Strategic Advisor should be signed this month. According to the timetable, bids for privatization of the distribution operations will be called during the second half of 1999 and the process should be completed by late 1999 or early 2000. Bids will then be called for the generation operations.
6. The government is receiving support in this process from the IDB and the MIF through TC operation ATN/SF-4724, with resources up to US\$400,000 to cover the cost of the first phase of the divestment studies. Support is also being provided under an MIF/TC operation (MIF/AT/193) recently approved by the Donors Committee for a total amount of US\$3,476,000, with the government putting up US\$870,000.
7. The specific steps to be taken in this process include the engagement of an investment bank and formal establishment of the divested enterprises with a definition of their assets and basic organization. The initial "teaser" notice will be sent out through the investment bank followed by a memorandum of information to prospective investors, explaining the details of the process, describing the operations the government would like open to private investment, and the forms of investment involved. The divestment will then be promoted among international private investors, and the process will be concluded with the sale of stock or assets for privatization and/or capitalization of the distribution companies and, subsequently, the generation companies.
8. With respect to electricity rates, our government has agreed with the IDB on a gradual plan of adjustments to the rate structure, designed to eliminate distortions in the current structure. This plan, to be executed over four years (1998-2001), was presented to the IDB in June (see GOBID-116-06-98). Implementation of the gradual plan will ensure that rates for consumers at all levels will reflect the corresponding marginal cost. Cross subsidies between consumer groups, with the exception of residential rates, will thus be eliminated. Although average residential rates will in fact

cover the marginal cost, once the adjustment has been completed consumption of up to 100 kWh/months would be subsidized as a matter of social policy given the high levels of poverty in our country.

9. Under this gradual plan, monthly rate adjustments of 1.5% will continue throughout 1998 so that on average, the overall rate level will reflect the long term marginal cost for 1998, estimated at US\$0.1080/kWh. Starting in January 1999, the cross subsidies between consumer categories will be gradually reduced, although the rate applicable to residential customers consuming 100 kWh hours per month or less will remain unchanged in dollar terms. Any cross subsidy that is maintained will be transparently shown with an explicit indication on customer bills starting in 1999. Based on the timetable mentioned in paragraph 5 above, the subsidy arrangements will have to be implemented on a timely basis. In that regard, the government has already indicated to the Bank its commitment to establish the necessary mechanisms for transferring funds to the distribution companies to cover the difference between the rates applied and the corresponding marginal cost.
10. The government is aware that within the new legal and institutional framework being developed for the electric power subsector, the regulatory and policy-making institutions will have to be consolidated and strengthened on a sustainable basis if they are to function properly. With respect to the INE, the government will support and monitor efforts to strengthen and preserve its efficiency and technical excellence. In accordance with the INE Reorganization Act (Law 271), the INE's President will perform his functions on a full-time basis. Once established, the Board of Directors will approve the General Work Plan, its own rules of procedure, and the organizational structure in accordance with Law 271. In the light of those decisions, the Board will then determine the amount of time the other two Directors will be required to dedicate to their functions. With respect to the National Energy Commission (CNE), the agency responsible for policy-making, the government will provide the support and resources needed for it to perform the functions assigned to it by the LIE and Law 271.
11. The Government of Nicaragua will take all measures necessary to complete the privatization of ENEL, including the introduction of amendments to the applicable legal provisions if necessary.
12. Within this context, the Government is providing support for ENEL in executing the works program agreed upon with the IDB as part of the operation proposed here. This relates primarily to investment in transmission works, the only activity that will remain under state ownership. In addition, a small rural electrification pilot program, under which the government, through the CNE, will continue the efforts to improve electric power coverage in rural areas on a sustainable basis. Also, to help ENEL defray costs incurred as a

result of drought and El Niño, which obligated the company to reprogram electric power supply (changes in the electricity generation structure resulting from these phenomena drove fuel purchases and energy costs higher), the government will transfer US\$8 million equivalent to ENEL, to be drawn from resources to be included under the fast disbursing component of this operation.

To summarize, it is clear that Nicaragua is making significant strides in modernizing its economy. It has made substantial progress in the area of economic stabilization and liberalization and has begun the process of modernizing the state. It has also taken measures to solve the problems of land ownership and unemployment, all resulting in sustained economic growth as shown by the figures for GDP and unemployment, as well as improvements in the microeconomic indicators. A legal framework has been established that will allow the electric power sector to be restructured and accommodate broader private-sector participation. The Hybrid Program in Support of the Electric Power sector submitted herewith to the IDB represents an important element in this process and will serve as a basis for ensuring effective sector reform. The fast disbursing program will provide support to the government in its efforts to restructure ENEL and privatize the resulting distribution and generation companies.

I take this opportunity to extend my personal greetings.

Sincerely,

[signature]

Noel J. Sacasa C.

Minister

IDB Governor for Nicaragua

cc: Dr. Arnaldo Alemán L., President of Nicaragua
Mr. Enrique Bolaños G., Vice President of Nicaragua
Members of the Office of Economic Advisers

**HYBRID PROGRAM FOR SUPPORT TO THE ELECTRIC SECTOR
(NI-0069)
PROCUREMENT SCHEDULE FOR GOODS AND SERVICES FINANCED BY THE IDB**

DESCRIPTION	Call for bids	Award of contract	Amount (US\$'000)	Financing	Type of
of equipment for lines and substations					
er transformers	3/99	7/99	2,414	IDB	IC
ipment for high-voltage substations	3/99	8/99	9,247	IDB	IC
ipment for medium- and low-voltage substations	3/99	9/99	4,391	IDB	IC
dry materials and equipment	4/99	8/99	4,266	IDB	IC
erials for transmission lines	4/99	8/99	1,495	IDB	IC
ply and installation of capacitors and related equipment	4/99	9/99	1,642	IDB	IC
ps and pipes	4/99	9/99	995	IDB	IC
ering equipment for plants of the SIN	5/99	9/99	192	IDB	IC
d installation of electronic and communications					
t					
ter station, SCADA, EMS and UTR's applications	6/99	1/2000	3,720	IDB	IC
mmunications equipment	6/99	1/2000	3,380	IDB	IC
er optics cable	6/99	11/99	1,600	IDB	IC
on and installation					
struction works in substations	3/2000	7/2000	1,280	ENEL	IC
allation of substations	7/2000	12/2000	1,885	ENEL	IC
allation of transmission lines	6/2000	10/2000	805	ENEL	IC

PROPOSED RESOLUTION

**NICARAGUA. LOAN ___/SF-NI TO THE REPUBLICA DE NICARAGUA
(Hybrid Program for Support to the Electric Sector)
(Investment Component)**

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the República de Nicaragua, as Borrower, for the purpose of granting it a financing to cooperate in the execution of the Investment Component of a Hybrid Program for Support to the Electric Sector. Such loan will be for the amount of up to US\$46,130,000, or its equivalent in other convertible currencies, which are part of the resources of the Bank's Fund for Special Operations, and will be subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" of the Executive Summary of the Loan Proposal.

PROPOSED RESOLUTION

**NICARAGUA. LOAN ___/SF-NI TO THE REPUBLICA DE NICARAGUA
(Hybrid Program for Support to the Electric Sector)
(Sector Adjustment Component)**

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the República de Nicaragua, as Borrower, for the purpose of granting it a financing to cooperate in the execution of the Sector Adjustment Component of a Hybrid Program for Support to the Electric Sector. Such loan will be for the amount of up to US\$30,000,000, or its equivalent in other convertible currencies, which are part of the resources of the Bank's Fund for Special Operations, and will be subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" of the Executive Summary of the Loan Proposal.