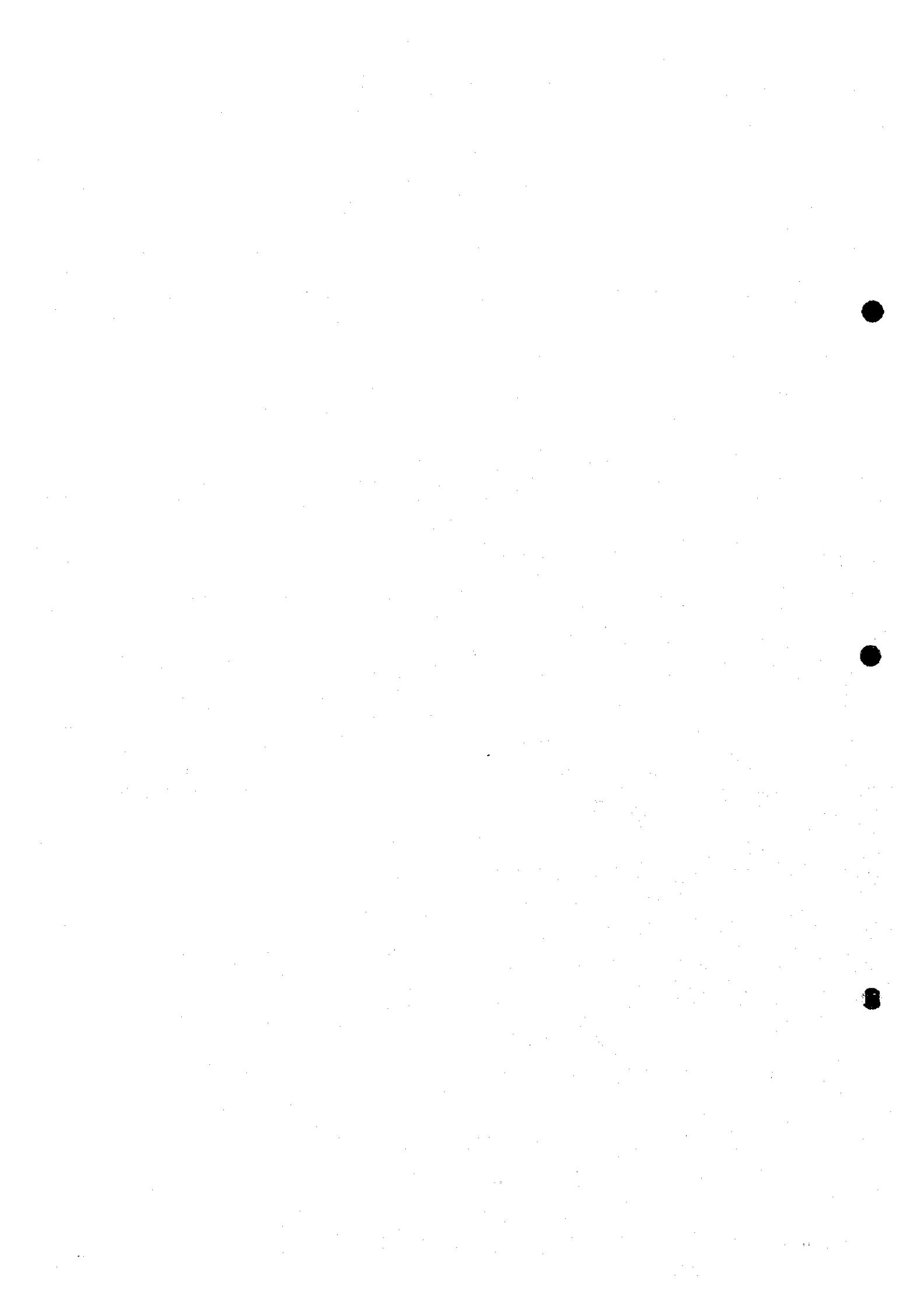


CHAPTER 8

PLANS

FOR

TRANSFER OF THE 69 KV FACILITIES



Chapter 8: PLANS FOR TRANSFER OF THE 69 KV T/L FACILITIES

This chapter presents several options for the transfer of the 69 kV T/L facilities owned by the NPC. Based on the influence of the EC problems and the Omnibus Act, the preparation emphasized the questions of what kind of organization should be employed in the transfer, how the lines should be divided, and to which of the ECs they should be transferred.

The study team subsequently excluded the option of partitioned transfer from consideration on the grounds that it was not possible. The range of options was further narrowed down by examining feasibility with respect to the burden on the ECs and degree of necessity for problem-solving on the political level. This screening process led to the selection of the option of establishing a new transmission cooperative to receive the transfer while maintaining the existing 11 EC organization.

The study team also prepared a scenario for the transfer as the optimal approach to solution of the attendant problems and proposed the same to the concerned parties.

8.1 Options for Transfer of the 69 kV T/L Facilities

8.1.1 Current Problems of ECs

Receipt and operation of the subject facilities by the ECs require identification of their problems.

The power supply business of the ECs consists mainly of the general consumer demand and has a structure that does not afford prospects for a great increase. As such, a rapid improvement in earnings cannot be expected. However, it is also true that the EC management has not made significant efforts to achieve a breakthrough in this situation. In addition, the EC operation of their own distribution facilities is not proper and has much room for improvement.

- The ECs have a low earning power. There are several factors at work here. First, their range of business activities is limited. The major companies PASAR and PHILPHOS are big consumers of energy on Leyte island (their monthly consumption comes to some 32 million kWh and accounts for 64 percent of the total on Leyte), but they are supplied directly by the NPC. Most of the EC supply therefore goes to small-scale users and the residential (domestic) segment. It is consequently very difficult to increase earnings. A second factor is the high cost of power. The cost of power purchase from the NPC occupies about 70 percent of the total cost. This would be difficult to reduce by EC efforts, and it would also be impossible to purchase from other enterprises (IPPs or other franchises). A third factor is high loss rates; according to the

interview with some ECs, technical loss is in the range of 7 - 8 percent, and non-technical loss, 10 - 15 percent.

- The EC managers must improve their management capabilities. Partly because they are cooperatives, the ECs contain few managers who concentrate on improving earning power. In addition, although ECs borrow funds in great amounts from the NEA, some managers apparently do not feel a serious responsibility for repayment, since the funding is from the government. There are also some managers who are not making an adequate effort in management. In some cases, persons with a strong concern for local contribution are selected to head ECs merely on that grounds. Obviously, for the future, ECs should be headed by people with business experience. Besides the cost increase associated with a pool of customers that is numerically small but spread over a wide area, a major reason that small-scale ECs fall into deficit is the great cost burden entailed by an increase in the electrification rate.
- As for problems with EC facilities, the 69/13.2 kV substations are not fully equipped with relays, breakers, and voltage regulators, and the facilities themselves are in a deteriorated state. Distribution lines are not being adequately maintained because of financial constraints.
- There are also problems with EC technical capabilities. The ECs do not have a sufficient store of know-how for system analysis and do not make full use of technical standards. As a result, technical skills cannot be exercised fully in the preparation of facility plans.

8.1.2 Electric Power Business Environment Surrounding the ECs after Passage of the Omnibus Act

It is clear that, with a few exceptions, an improvement of EC management cannot be expected if the distribution business continues in the current form.

Furthermore, the following problems could result from continuation of business in the current form and make the business environment for the ECs even worse.

- The ECs must shift to a status of holding cooperatives after passage of the Omnibus Act. For the smaller ECs, however, it would be presumably be difficult to increase corporate costs and allot stock to members accompanying this change. It would not be possible to register with the CDA without issuance of and payment for stock. In this case, the EC would lose its cooperative status and also privileges such as tax exemptions for business income.
- The NPC as well has applied to the ERB for a revision of its tariffs. If the ERB approves

the revision, the NPC will switch from bundled power tariffs to unbundled power tariffs. This switch would rule out application of PVD on charges in wholesaling from the NPC to the ECs.

- If the NPC is privatized upon passage of the Omnibus Act, it would have to pursue higher levels of business profit and efficiency, and therefore could refrain from investment to improve the condition of 69 kV T/L facilities in regions where spending cannot be retrieved, such as Leyte and Samar. In this case, the maintenance situation could become even worse than it is now. Alternatively, the NPC could shift to a policy of investing in facilities and preserving a business profit by hiking its wholesale rates to the ECs.
- The Omnibus Act specifies the sub-transmission owned by the NPC shall be transferred to the distribution utilities including electric cooperatives. When these facilities would be transferred to a third party utilities in future, there could arise for ECs to accept the higher whole sale tariff which includes profit and others caused by the operation of the third party company.

8.1.3 Benefits of Receipt of the 69 kV T/L Facilities by the ECs

Although the receipt of the transfer of 69 kV T/L facilities would not immediately improve their management status, it would present a chance for improvement of the business of the ECs through, for example, the following prospects.

- By acquiring ownership of these facilities, the ECs could maintain them themselves and better their condition. The resulting decrease in outage duration could be expected to improve the balance of operating income and expenditures.
- Receipt of the transfer would entail additional costs (e.g., assets depreciation, interest, and maintenance), but the wholesale tariff in purchase from the NPC would decline by an amount equivalent to the 69 kV transmission portion (0.1131 pesos per kWh as of 1996), and this would make the ECs less vulnerable to fluctuation in NPC wholesale tariffs.
- Receipt of the transfer could also be expected to improve the structure of the EC power demand, which currently depends heavily on the consumer sector. For example, ownership of the 69 kV T/L facilities would enable direct supply to large (industrial) customers (however, there are no firm plans for siting by such customers in the service area at present).

8.1.4 Organization for Acceptance of the 69 kV T/L Facilities

As noted above, there is a need for improvement of the disposition of EC business and management by involvement, in some form, in the operation of the 69 kV T/L facilities and by a

heightening of management awareness.

For this reason, the following classification was made of the types of accepting organizations as options for the transfer program.

There are two major categories of organization for acceptance of the 69 kV transmission facilities: on the EC balance sheet or off it.

In case of purchase off the balance sheet, the transfer could be made to a new established cooperative engaged exclusively in operation and maintenance of the 69 kV transmission facilities.

In case of purchase on the balance sheet, there would be two prospective accepting organizations: 1) the existing ECs and 2) a new cooperative established by reorganization of existing ECs.

8.1.5 Options for Transfer of the 69 kV Transmission Facilities Considered by the Study

Table 8-1 shows the options considered by the study team for transfer of the 69 kV transmission facilities.

The first level of classification consists of three options, as described above. The first option is receipt of the transfer by an organization off the EC balance sheet. The second and third options propose purchase on the EC balance sheet.

- Option 1: Establishment of a new transmission cooperative for purchase and operation of the transmission lines
- Option 2: Purchase and operation of the transmission lines by the existing ECs as currently organized
- Option 3: Amalgamation of the existing ECs to organize a new cooperative for ownership and operation of the transmission lines

The second level of classification derives from difference as to whether all 11 of the ECs or only the financially strong ECs participate in each of these three options.

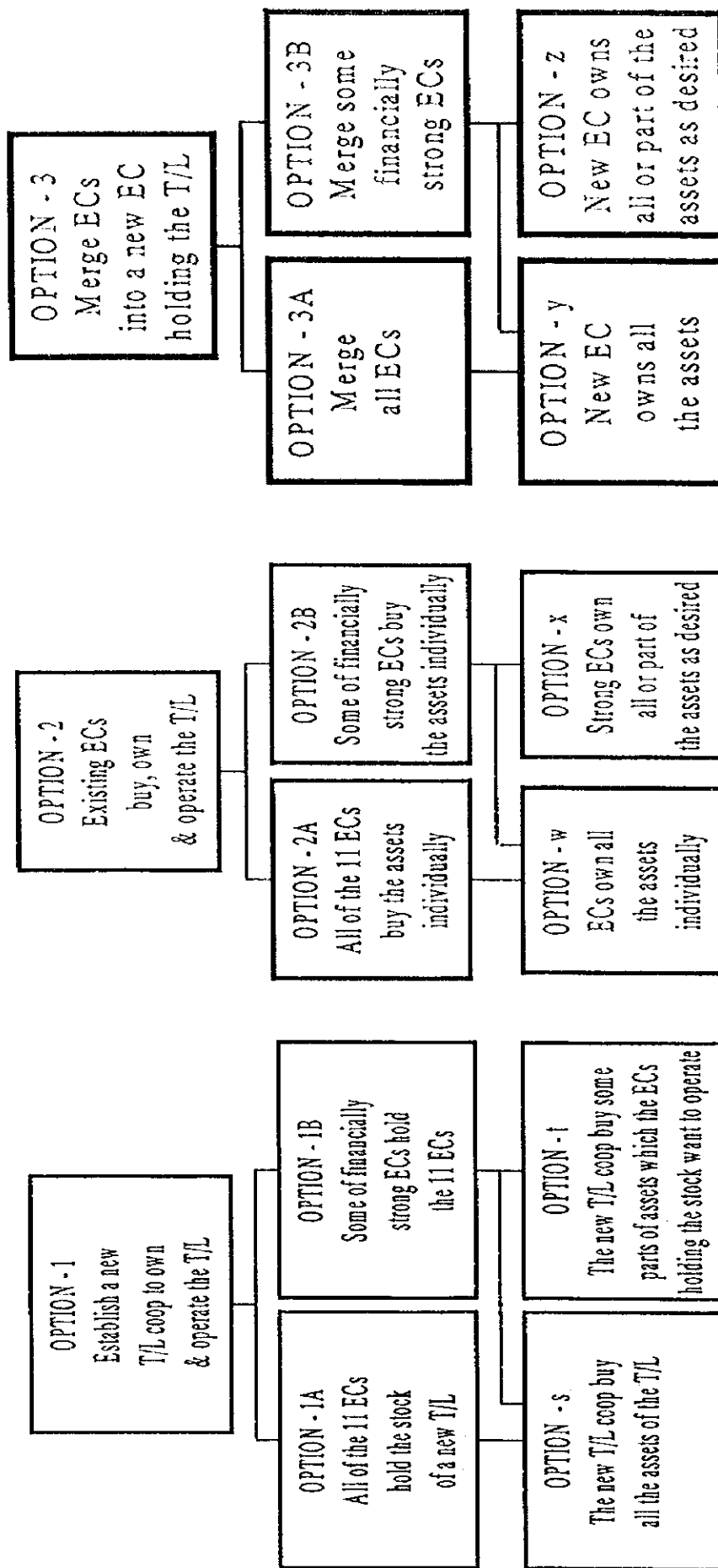
- Option 1-A: Participation by all 11 ECs in the new transmission cooperative
- Option 1-B: Participation of only the financially strong ECs in the new transmission cooperative
- Option 2A: Purchase of the individual transmission facilities by all 11 ECs
- Option 2B: Purchase of the individual transmission facilities by only the financially strong ECs

- Option 3A: Amalgamation of all 11 ECs
- Option 3B: Amalgamation of only the financially strong ECs

The third classification was made depending on whether the transfer would comprise all 69 kV transmission facilities or only those desired to be transferred.

- Option s: Purchase of all facilities by the new transmission cooperative
- Option t: Purchase of only the desired facilities by the new transmission cooperative
- Option w: Purchase of all facilities by the existing ECs, but transfer in partitioned form
- Option x: Purchase of only the desired facilities by the existing ECs
- Option y: Purchase of all facilities by the new amalgamated cooperative
- Option z: Purchase of only the desired facilities by the new amalgamated cooperative

Table 8 - 1 Options for the transfer of the 69 kV T/L



8.2 Narrowing Down and Assessment of Transfer Options

In the assessment of options for transfer of the 69 kV transmission line facilities, it is important to bear in mind that the option selected must be a realistic one. The Philippine power sector is heading toward restructuring (liberalization) in step with the privatization of the NPC following the enactment of the Omnibus Act. As such, the transfer option selected must be in conformance with the orientation of the Omnibus Act and acceptable to the DOE and other concerned national agencies, and particularly to the NPC, NEA, and the 11 ECs. In addition, the 11 ECs must profit equally from the transfer.

The NPC is considering transfer of sub-transmission lines in spite of the enactment of the Omnibus Act, and wants to leave the conditions of transfer to the market mechanism. The NEA would like to increase the strength of the ECs, and does not want to see the current environment in the power sector worsened by the transfer.

In light of these perspectives on the transfer among the concerned parties, the options can be assessed with reference to several conditions, including the soundness of the business of the principals after the transfer, the lack of unreasonable financial requirements, ability for smooth execution of business, and prospects for efficient use of power facilities. Furthermore, the determination of the optimal option was based not only on the assessment results but also on the results of consultation with the NEA and ECs, and on the current situation.

This section begins with a narrowing down of the transfer options identified in Section 8.1 based on close investigation. This is followed by an assessment of the remaining options in the aspects of management, facilities and technology, finances and costs, and regulatory issues. The process of narrowing down and assessing the options may be summarized as below.

Process of narrowing down and assessing transfer options

- 1) Narrowing down of options identified in Section 8.1
- 2) Assessment in each of the following aspects
 - a) Management
 - b) Facilities and technology
 - c) Finances and costs
 - d) Regulatory issues
- 3) Determination of the optimal option based on the results of 2)

8.2.1 Narrowing Down of Transfer Options

As shown in Table 8-1, the study identified several conceivable options for the transfer.

However, it was decided to exclude the option of transferring only a part of the facilities (that part which the ECs would like to receive) in the subject area, on the grounds that it runs counter to the intent of the study. For example, it would be financially possible for the ECs on sound financial footing (e.g., Leyeco II and Leyeco V) to accept the 69 kV transmission lines in the northern part of Leyte island. This would amount to the acceptance of only the best-performing transmission lines, i.e., those offering the best prospects for return on investment, by the best-performing ECs, with the risk that the other lines would be neglected. In other words, the transmission lines that were not accepted would be those not offering good prospects for return on investment. The ECs situated downstream from them could therefore incur disadvantage as profit gravitates to only a few of the other ECs. Moreover, this idea of having transmission lines in the same voltage class operated by different enterprises could be linked to a blurring of supply responsibilities and would not be desirable from the standpoint of facility operation.

As a result, it was decided to exclude Option 1B-t (transfer of only certain transmission lines to a new transmission cooperative established by only the strong ECs), Option 2B-x (transfer of only certain transmission lines to only the strong ECs), and Option 3B-z (transfer of only certain transmission lines to an amalgamation of only the strong ECs). The team consequently decided to assess only those options involving transfer of all 69 kV facilities (all sections) on Leyte and Samar.

8.2.2 Assessment of Transfer Options in the Aspects of Management, Facilities and Technology, Finances and Costs, and Regulatory Issues

The study team made an assessment as to whether all of the 69 kV transmission line facilities should be transferred to a newly established transmission cooperative (Option 1), to the existing ECs (Option 2), or to an amalgamation of the existing ECs (Option 3). This assessment considered the aspects of management, facilities and technology, finances and costs, and regulatory issues. The additional option of having only the ECs in the best financial position aspect all of the facilities under the same conditions as in these three options was also evaluated in the financial aspect. The Table 8.2-1 shows the results of investigation for transfer options of 69 kV T/Ls and systems.

(1) Assessment in the management aspect (Refer to Table 8.2-1)

An assessment of the remaining options was made in the aspect of management elements, i.e., organization and staffing, administrative facilities, power tariffs, and rationality. The assessment with respect to organization and staffing and administrative facilities considered the presence or absence of certain requirements and, if present, their degree. The assessment with

respect to power tariffs was based on calculation of the amount of charge added to the NPC wholesale tariff. The assessment with respect to rationality considered overall merit based on the results of the preceding assessments.

- Organization and personnel (Refer to Appendix 8.2-1)

- 1) Options 1A and 1B

Under these options, a new transmission cooperative would be established for performance of maintenance and management, with one office on Leyte and one on Samar. Each would be staffed with 32 maintenance technicians, for a total of 64. The staff would also include six clerical workers under the management layer, for a total staff of 70, who would be newly recruited.

- 2) Option 2A

Under this option, the existing 11 ECs would receive the transfer of the 69 kV transmission lines, and each EC would therefore institute a new division for T/L maintenance and operation. The transfer would consequently compel the hiring of an additional eight maintenance technicians and two clerical workers, for a total of ten, by each EC. As such, the combined staff increase would reach 110, who would be newly recruited.

- 3) Option 2B

This option would entail the formation of a new T/L maintenance and operation division in each of the two or three ECs purchasing the 69 kV transmission facilities. In this case, the transfer would necessitate the hiring of an additional 80 persons for maintenance and operation of these facilities in the case of purchase by two ECs, each needing four groups of maintenance technicians and six clerical workers, for a total of 38, or nearly 80 taken together, these staffs would be newly recruited.

- 4) Option 3A

This option would entail the formation of a new T/L maintenance and operation division in the new cooperative formed by amalgamation of the existing ECs. 64 maintenance technicians (eight groups) and eight clerical workers, 72 persons in total are needed, but there would be no need to hire additional personnel, because the surplus personnel associated with the amalgamation could be reassigned to operation and maintenance of the 69 kV T/L facilities and to clerical positions.

- 5) Option 3B

This option would also entail the formation of a new T/L maintenance and operation division in the new cooperative formed by amalgamation of the existing ECs. 64 maintenance technicians (eight groups) and eight clerical workers, 72 persons in total are

needed. The surplus personnel associated with the amalgamation could be reassigned to operation and maintenance of the 69 kV T/L facilities and to clerical positions, but there could arise a need to hire additional personnel from outside because few ECs would participate in the amalgamation.

- Administrative building (Refer to Appendix 8.2-1)

- 1) Options 1A and 1B

Two new sites, one on Leyte and one on Samar, would be required for the offices of the new transmission cooperative. The additional expenditure for 1,000 square meters of land and a building with a floor area of 500 square meters at each site is estimated at about 16 million pesos total.

- 2) Option 2A

The offices of the existing ECs would be expanded; extra space of about 140 square meters would be added by each EC to accommodate the additional personnel posted for the 69 kV transmission lines. The cost of this expansion is estimated at 15 million pesos for the 11 ECs as a whole.

- 3) Option 2B

Two buildings, each with a floor area of 280 square meters, would be constructed on Leyte and Samar to accommodate the roughly 80 maintenance personnel of the ECs which participate in the transfer. The cost of this additional construction is estimated at 9 million pesos.

- 4) Option 3A

Because members of the existing distribution staff would be reassigned to operation and maintenance of the 69 kV transmission facilities, the existing property of the ECs would suffice, and there would be no need for acquisition of additional land or construction of new buildings.

- 5) Option 3B

For the same reasons as noted for Option 3A, there would be no need for acquisition of additional land or construction of new buildings as a general rule. However, additional space would be needed if recruitment of additional personnel would become necessary depending on the number of participating ECs.

- Power tariff

- 1) Options 1A and 1B

The cost of operation of the 69 kV transmission lines by the new transmission cooperative would be 0.25 pesos per kWh (study team estimate for 2001). This figure is higher than that of 0.14 pesos per kWh for the sub-transmission delivery charge applied under the NPC unbundled power tariff system (as estimated by the study team for the same year).

- 2) Options 2A and 2B (details are presented in Appendix 8.2-1)

The cost of operation of the 69 kV transmission lines at Leyeco II and Leyeco V would be fairly low, at 0.05 and 0.17 pesos per kWh, respectively (study team estimate for 2001). At all of the other ECs, however, it would increase (and reach a maximum of 0.80 pesos per kWh at Leyeco IV; study team estimate for 2001). Furthermore, a delivery charge would be added for the transmission lines owned by the ECs (reaching a maximum of 1.37 pesos per kWh at Leyeco IV; study team estimate for 2001). This would result in an increase in rates along with the EC distance from power source substations (138/69 kV).

- 3) Options 3A and 3B

Because there would be no direct increase in staffing, costs would be lower by an amount equivalent to the extra personnel costs in options 1A and 1B, and are estimated (by the study team for 2001) at 0.22 pesos per kWh.

- Rationalization (Refer to Appendix 8.2-1)

- 1) Options 1A and 1B

An additional 70 personnel would be required for the staffing of the new organization, which would also require additional land and buildings. In point of rationalization, these options consequently compare favorably with options 2A and 2B, but unfavorably with options 3A and 3B. Relative to Option 2A, Option 1A and 1B decrease in the personnel requirement by 40, but increase in the property cost requirement by 1 million pesos.

- 2) Options 2A and 2B

A total of 110 additional personnel would be needed for the 11 ECs as a whole. Although this additional staffing could be accommodated by expansion of the EC buildings, these options are less rational than the others. Relative to Option 1A, Option 2A increases in the personnel requirement by 40, but decreases in the property cost requirement by 1 million pesos, and Option 2B increases in the personnel requirement by 10, but decreases in the property cost requirement by 7 million pesos.

3) Option 3A

The surplus personnel 72 freed by the amalgamation of the ECs could be reassigned to O&M posts and clerical work for the 69 kV transmission facilities, and additional personnel would not have to be hired. And there would be no need for new building. As such, this option is the most rational of all.

4) Option 3B

As noted for Option 3A, surplus personnel 72 freed by the amalgamation could be reassigned to O&M posts and clerical work for the 69 kV transmission facilities, and to this extent there would be no need to recruit additional personnel and no need for new building. Depending on the number of ECs participating in the amalgamation, however, there could arise a need for additional staffing and buildings expansion.

(2) Assessment in the aspect of facilities and technology (Refer to Appendix 8.2-2)

In the aspect of facilities and technology, the options were assessed with respect to the supply responsibility, which is the key mission of electric power enterprises, and issues related to actual system operation.

There was no significant gap among options as regards the rating of technical capabilities. In each case, it is thought that EC technicians would have to undergo additional training. This is because, while some of the ECs owned 69 kV transmission lines until the 1980s, nearly ten years have since passed, and they are thought no longer to have the capability to maintain such lines.

1) Options 1A and 1B

Because the 69 kV transmission lines would be transferred on a blanket basis to the new transmission cooperative, this cooperative would bear the responsibility for supply through these lines. However, a total of 12 enterprises (the new transmission cooperative plus the 11 ECs) would be involved in the power system operation on Leyte and Samar, and this would complicate the command scheme for system operation. As a result, it could become more difficult to respond promptly to emergencies, carry out integrated maintenance of facilities, and prepare coordinated facility plans.

2) Option 2A

The 69 kV transmission lines would be distributed among the existing 11 ECs, such that several ECs would be involved in the ownership of a single line. This arrangement would blur the locus of responsibility for supply and could make it impossible to maintain a consistent level of power quality. Similarly, power system operation would be made more

difficult by the involvement of 11 ECs in it.

3) Option 2B

The 69 kV transmission lines would be transferred to two or three ECs, which would become responsible for supply to the others. As such, supply responsibility would be clearer than in Option 2A. Because power system operation would involve the rest of the ECs engaged in distribution alone as well as those receiving the transfer, the rating in the operation aspect would be the same as for Option 2A.

4) Option 3A

The new cooperative formed by amalgamation of the ECs would own both the 69 kV transmission lines and the distribution lines, and would be exclusively responsible for supply to the final customer after reception from the NPC. In addition, it could be engaged in power system operation directly with the NPC, and achieve a total operation extending to the distribution system. In short, ownership of all facilities by a single enterprise is thought to be the best option because it makes supply responsibilities definite and helps to simplify the operation.

5) Option 3B

In the case of transfer of the 69 kV transmission lines to a new cooperative formed by amalgamation of two or three ECs, this cooperative would become responsible for supply to the rest of the ECs. In addition, the eight or nine other ECs would nevertheless be involved in the system operation. As such, this option is somewhat inferior to Option 3A.

(3) Analysis of finances and costs

This section investigates differences, if any, in the aspect of finances and costs depending on the type of operation by the new enterprise. The investigation covers cost items including personnel, maintenance, capital investment, depreciation, and facility purchase as well as the funding burden (interest payable), and also considers income and profit. Naturally, cash flow was also studied. A calculation was made of the major operation costs at each of the 11 ECs for the purpose of comparison. In addition, their combined operation income, cost, and cash flow were also evaluated.

It was assumed that the new cooperative would do its utmost to reduce its operation cost, and therefore would not resort to methods based on market prices, introduction of external funds, and a joint-stock organization. And with its cooperative status, it would not issue dividends and would have a low profit rate of about 4 percent. The cash flow, i.e., the sum of the profit (4 percent of the total cost) and depreciation cost, may be regarded as the source of funds for

repayment of loans. The analysis did not posit a reasonable rate of corporate return and an attractive profit rate that would enable procurement of subscription and other funds from external sources. The price in purchase of the facilities from the NPC was assumed to be the same in each case, as was the profit rate of 4 percent. Therefore, differences emerged in the cost aspect because of differences in respect of personnel expenses and management costs. Whereas the required number of additional personnel would be 110 in the case of operation by the existing ECs separately, it would be only 70 in that of operation by a single enterprise. Moreover, in the case of amalgamation of the 11 ECs (which is, however, only a slight possibility), there would be no need for recruitment of additional personnel since the T/L facilities could be operated by internal technicians, and this would bring a great cost reduction. Because of the assumption of a profit rate equal to 4 percent of the total cost, emphasis here should be placed on cost comparison.

1) Option 1A

In this case, the newly established cooperative would purchase all of the T/L assets, and the 11 ECs would be its subscribers. This option is the most practical. In the aspect of finances and costs, its rating is the highest after that of Option 3A (purchase of the assets by an amalgamation of all 11 ECs). The reason is a low total cost; the required number of additional personnel would be 70, or 37 percent less than in the case of purchase by the 11 ECs separately. Obviously, management overhead would also be reduced since it is set at 0.8 percent of personnel costs. The transmission operation cost therefore would be held to a low level. The net cost (minus the charge for delivery from the NPC) would come to 0.11 pesos per kWh in 2001 and a minus 0.07 pesos per kWh in 2010. The cash flow would be 20 million pesos in 2001 and 32 million pesos in 2010. The yearly operation cost would reach 103 million pesos in 2001, and net deficit would continue for the first two years for the 11 ECs as a whole.

2) Option 1B

This is the case of establishment of a new transmission cooperative with participation only by the financially strong ECs (i.e., Leyeco II and Leyeco V). The investigation concerned whether or not it would be possible for the two to purchase all of the T/L facilities. It was found that the two could make the required investment, but that it would be difficult for them to raise the requisite 449 million pesos from external sources based solely on their earning power, due to considerations of the funding burden and credit guarantees. The combined yearly profit of the two is low at about 22.1 million pesos, and would make it hard to support fund repayment. In addition, operation of the new cooperative by the two alone would impose a heavy burden on management capabilities.

3) Option 2A

This is the case of purchase of part of the transmission facilities by each EC separately. A study of the burden of operation cost at each EC over the years 2001 - 2010 found that such purchase and operation would be viable at the financially strong ECs (Leyeco II and Leyeco V). It is estimated that Leyeco V, for example, could fully cover the additional cost of 15 million pesos for transmission in 2001 and still turn a profit. Leyeco V also would have no problem shouldering the burden of purchase because it has few borrowings. However, at the seven ECs where borrowings outweigh income from the existing business, receipt and operation of the transmission facilities would squeeze finances and be unpracticable.

4) Option 2B

In this case, the financially strong ECs (Leyeco II and Leyeco V) would purchase all of the transmission facilities. However, considerations of the funding burden and credit guarantees would make it difficult for these two to raise the requisite 449 million pesos solely on the strength of their own earning power. Their combined 1996 cash flow came to only 32.8 million pesos, and this level would not be high enough to bear the burden of interest payment accompanying purchase. It would be hard for the other ECs to receive transmission facilities individually, much less bear the burden of others as well.

5) Option 3A

In this case, the 11 ECs would be amalgamated into a single enterprise and purchase all of the transmission facilities from the NPC. This would have the most rationalizing effect on management; the requisite number of additional personnel would be 70 less than in the case of establishment of a new transmission cooperative. This is because surplus personnel arising upon the amalgamation could be reposted to operation of transmission. However, amalgamation of all 11 ECs into a single entity will probably be ruled out for the time being by political considerations.

6) Option 3B

This is the case of purchase of all facilities by an amalgamation of only the financially strong ECs. However, even with the amalgamation of Leyeco II and Leyeco V, considerations of the funding burden and credit guarantees would make it difficult for these two to raise the requisite 449 million pesos solely on the strength of their own earning power.

a) Perspectives on cost and return

The following perspectives were applied in the assessment of the viability of business in operation of transmission facilities.

- The costs associated with transmission were calculated on the "cost-plus" basis. The cost-plus premise is that there would be no operation of a mechanism for determination of the price structure by the market, or by the relationship between seller and buyer as representative of supply and demand, and that profit is guaranteed regardless of the cost level.
- The rate of profit on cost guaranteed by the NEA is 4 percent of the total (gross) sales.

- Gross sales equals gross cost plus 4 percent

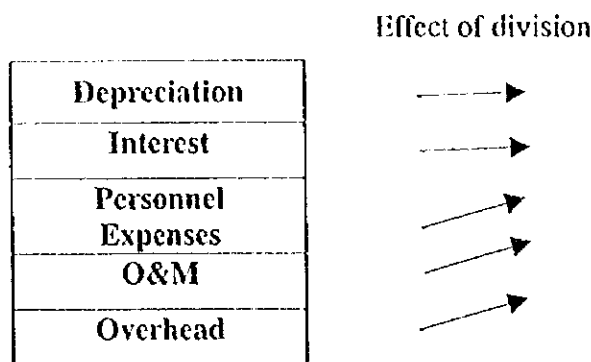
These perspectives made it inappropriate to apply the conventional one of assessing the degree of return that may be expected from investment on the project in question relative to the price determined by the market. This is because one of the premises is a rate of profit fixed at 4 percent of sales by the NEA; profit is secured regardless of the level of cost. Even if a calculation was made of the IRR, the rate would be no more than a conversion of the 4-percent sales profit rate into the rate of discounted profit on equity. In short, the IRR could not be properly used for assessment.

Another issue is that the new entity created for operation of the transmission lines would be not a joint-stock company but a cooperative. This would constitute a major difference from the ordinary project. Virtually all of the funding requirement would be met by financing from the NEA; subscription corresponding to equity would account for only a small share. In other words, it would not make much sense to view business viability in terms of return on equity (moreover, the overall profit would be set right from the start at 4 percent of the gross sales). Furthermore, the interest on the financing from the NEA is fixed at 13 percent per year. As such, it would lack meaning to assess viability with reference to the IRR, since the major conditions are all fixed from the start.

For the NEA, the only condition applied in the investment decision is whether the transmission cost upon purchase of the assets would be higher or lower than the delivery charge (or wheeling rate) currently paid (or to be paid in the future) to the NPC.

- b) About the difference between the case of integration into a single transmission cooperative and division among the 11 ECs in respect of business viability

The cost of the transmission business consists mainly of the following items.



As is clear from this cost structure, division of the assets among the 11 ECs would drive up the overall cost as compared to operation by a single entity.

The depreciation cost is determined by the assessed value of the assets. Even if divided into 11 parts, the total would be the same as in the case of blanket sale (to a single entity). Therefore, this cost would not change depending on the form of business. The interest on financing from the NEA is set at 12 percent annually. This also would not change depending on the form of business. Due to the decline in the economy of scale, personnel expenses rise as the requisite number of personnel rises and the size of the organization falls. In addition, overhead is a function of the rate of personnel expenses, and therefore would also rise with division of the organization.

Due to the same decline in the economy of scale, O&M costs would rise as the size of organization falls.

The conclusion is that, however arranged, a divided organization would hold less advantage in the cost aspect than operation by a single organization.

(4) Evaluation from Regulatory Viewpoints

The Omnibus Bill now under discussion is aimed at rationalizing the management of electric cooperatives (ECs) as part of the power sector reform. The most serious problem of ECs is that there are so many small cooperatives and they lack sufficient economies of scale. Although it is still unknown what kind of clauses will be include in the final bill, ECs cannot evade structural rationalization by merger and acquisition.

In light of the aims of the bill, we recommend Option 3—as many ECs as possible should be consolidated into one EC, and this new organization should manage the 69kV T/L facilities. Conversely, we do not recommend Option 2—the structure of existing small ECs should remain, and the T/L facilities should be split and operated individually. Option 1 is a compromise between Option 3 and Option 2, but we expect that this will be a trigger for the consolidation of

ECs and structural reform in the future.

8.2.3 Determination of Transfer Options

The assessment results provided the basis for a determination of the relative merits of each option.

In the management aspect, Option 3 was judged to be the best because, under it, the transfer would not entail the hiring of additional personnel and construction of additional office. It also compares favorably with the other options in respect of the cost of power purchase from the NPC.

In the aspect of facilities and technology, Option 2 was judged to have undesirable effects for supply responsibilities and power system operation because it is a form of partitioned transfer. While both Option 1 and Option 3 are premised on blanket transfer, the latter was judged to be superior because of its simplification of the form of operation.

In the aspect of finances and costs, Option 3 was judged to have the best rationalizing effect, and the hiring of additional personnel could be avoided under it by reposting of surplus personnel. It was followed in this respect by Option 1, which would enable receipt of the transfer with relatively few additional personnel. It would be difficult for the few financially sound ECs in Option 2 to raise the funds needed for all of the facilities.

The Omnibus Act calls for a strengthening of the foundation of finances through amalgamation of the ECs, and Option 3 is most attuned to this line. The next-best option is Option 1, which could serve as a stepping stone to future integration.

Option 3 (amalgamation of the 11 ECs for transfer of the 69 kV transmission lines) is thought to be the best in the aspects of finances and costs, management, and technology, and consequently the best overall. It is also regarded as in conformance with the trend of privatization now under way in the Philippines. In practical terms, however, it would probably be impossible to amalgamate the 11 ECs in the near future, in light of past developments. For example, in connection with a separate aid project on Mindanao, the aid institution recommended EC amalgamation. This proposal garnered some support, but was eventually turned down by the Philippine government, on the grounds that such a step would be premature. It can also be noted that the NEA met with failure in its promotion of EC amalgamation on Luzon. In other words, Option 3 is regarded as the ideal option but one that is not realistic, and its rating was therefore lowered.

The option of having only the ECs in the best financial health accept all of the facilities is thought to have a low feasibility because of the excessive financial and cost burden it would impose.

The study team therefore decided upon Option 1A (transfer of the facilities to a new transmission cooperative established with the participation of all 11 ECs) as the next-best one for the case at hand.



Table 8.2 - 1 The results of investigation for transfer options of 69kV T/Ls and systems (figure denotes point)

Transfer options Items of assessment	Option 1 Establishment of a new transmission cooperative		Option 2 Purchase of transmission facilities by the existing ECs and division among them		Option 3 Amalgamation of the existing ECs	
	1A Participation by all 11 ECs	1B Participation by the 2 or 3 financially sound ECs	2A Purchase by all 11 ECs	2B Purchase by the 2 or 3 financially sound ECs	3A Purchase by the new EC created by amalgamation of all 11 ECs	3B Purchase by an amalgamation of the 2 or 3 financially sound ECs
	S Purchase of all assets by the new cooperative		W Purchase by the existing ECs and division among them		Y Purchase by the amalgamated ECs	
Management aspect	3	2	1	1	5	3
Organization	Need for a new company (the new T/L coop.) for management of T/L O & M	Need for a new company (the new T/L coop.) for management of T/L O & M	Need for a new organization to be instituted in each EC on Leyte and Samar for O & M	Need for a new organization to be instituted in each participating EC for T/L O & M	Need for a new organization to be instituted in the amalgamated EC for T/L O & M	Need for a new organization to be instituted in the amalgamated EC for T/L O & M
Personnel	Newly recruited 70 personnel for T/L O & M	Newly recruited 70 personnel for T/L O & M	Newly recruited 10 personnel in each EC, total 110 for T/L O & M	Newly recruited total 80 personnel for T/L O & M	Need 72 personnel for T/L O & M, but reposting of surplus personnel freed by the amalgamation to O & M, no need for additional hiring	Need 72 personnel for T/L O & M, and reposting of surplus personnel freed by the amalgamation to O & M principally, but probable need for additional hiring as well
Administrative building	Need for acquisition of 1,000 sq. meter of land and construction of a building with an area of 500 sq. meter on both Leyte and Samar, at a combined expense of 16 million pesos	Need for acquisition of 1,000 sq. meter of land and construction of a building with an area of 500 sq. meter on both Leyte and Samar, at a combined expense of 16 million pesos	No need for construction of a new building, but need for addition of about 140 sq. meter at each EC (and 1,540 sq. meter total) at a combined expense of 15 million pesos	No need for construction of a new building, but need for addition at the participating ECs, at a combined expense of 9 million pesos	Effective use of the existing EC property (land and buildings); no need for additions	Effective use of the property of the participating ECs and no additions as a general rule, but additional property could become necessary depending on the number of participating ECs
Power tariff (at the year 2001)	T/L operation cost is 0.25 pesos/kWh	T/L operation cost is 0.25 pesos/kWh	Difference of T/L operation cost depending on th EC; variation from 0.05 to 0.80 pesos/kWh	Difference of T/L operation cost depending on th EC; variation from 0.05 to 0.80 pesos/kWh	T/L operation cost is 0.22 pesos/kWh	T/L operation cost is 0.22 pesos/kWh
Rationalization	Relative to Option 2A, decrease in the personnel requirement by 40, but increase in the property cost requirement by 1 million pesos	Relative to Option 2A, decrease in the personnel requirement by 40, but increase in the property cost requirement by 1 million pesos	Relative to Option 1A, increase in the personnel requirement by 40, but decrease in the property cost requirement by 1 million pesos	Relative to Option 1A, increase in the personnel requirement by 10, but decrease in the property cost requirement by 7 million pesos	Highest degree of rationality; acquisition of technical and other personnel for the T/L facilities through reposting of surplus freed by the amalgamation, and no need for a new building	Inferior to Option 3A; reposting of surplus personnel freed by the amalgamation, and no need for a new building, but building expansion could possibly become necessary
Facilities and technology aspect	3	3	1	1	5	4
	No problem of division, but involvement of 12 enterprises in one power system would complicate the command scheme for system operation	No problem of division, but involvement of 12 enterprises in one power system would complicate the command scheme for system operation	Division of the T/Ls among the 11 ECs would blur supply responsibilities, with adverse effects on supply stability	Division of the T/Ls among the 2 or 3 ECs would blur supply responsibilities, with adverse effects on supply stability, but less so than in Option 2A	No problem of division, and involvement of only one enterprise in the power system, simplifying operation	No problem of division, but involvement of 8 - 9 enterprises in the power system, with complications relative to Option 3A
Finances and costs aspect	4	1	3	1	5	1
	Decrease in personnel costs by 37 % relative to the case of division; operation cost of 103 million pesos in 2001; net deficit for the 11 ECs taken together continuing for the first two years	The only financially strong ECs are Leyeco V and II, and it would be impossible to raise 449 million pesos from outside source based solely on the earning power of these two enterprises; insufficient cash flow as well	The financially strong ECs (Leyeco V and II) could buy and operate their share of the facilities, but their financial health would deteriorate as a result; impossible for 7 ECs	The combined cash flow of Leyeco V and II in 1996 came to only 32.8 million pesos; inability to bear the burden of interest payments associated with purchase	The best effect for rationalizing management; T/L facilities could be operated by the existing personnel; operation cost of 83 million pesos and cash flow of 6 million pesos in 2001	Even in the event of amalgamation of only Leyeco V and II, the earning power of only two enterprises would not be able to overcome difficulties in the aspects of funding and credit guarantee
Regulatory aspect	3	3	1	1	5	4
	While it would not make a direct contribution to integration of the 11 ECs immediately, the establishment of the new enterprises for the T/L facilities could possibly occasion future integration	While it would not make a direct contribution to integration of the 11 ECs immediately, the establishment of the new enterprises for the T/L facilities could possibly occasion future integration	Most out of conformance with the aim of strengthening EC finances through integration	Out of conformance with the aim of strengthening EC finances through integration	Most in conformance with the aim of strengthening EC finances through integration	In conformance with the aim of strengthening EC finances through integration overall score
Total	13	9	6	4	20	12



Operation and Maintenance Cost of 69kV TL Facility for Segregated 11 ECs - Option1

-- Borrowing, Sound Value --

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	102,724	104,926	107,129	109,465	111,274	113,196	115,234	117,396	119,687	122,112
2. Costs										
1) Maintenance	15,315	16,081	16,885	17,729	18,616	19,547	20,524	21,550	22,628	23,759
2) Personnel cost(70 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	7,790	8,024	8,265	8,513	8,768	9,031	9,302	9,581	9,869	10,165
3) Administrative costs (personnel costs x 80%)	6,232	6,419	6,612	6,810	7,014	7,225	7,442	7,665	7,895	8,132
69kV facility fixed assets balance (year-end) (449 mil. P. in 1996)	434,033	419,067	404,100	389,133	374,167	359,200	344,233	329,267	314,300	299,333
4) Depreciation cost (3.3%)	14,967	14,967	14,967	14,967	14,967	14,967	14,967	14,967	14,967	14,967
Capital investment	17,664	42,319	44,435	46,657	29,804	31,294	32,859	34,502	36,227	38,036
5) Σ-Depreciation (Capital investment *3.3%)	589	1,999	3,481	5,036	6,029	7,072	8,168	9,318	10,525	11,793
6) Interest payments on borrowings (12%) (balance of 449 million pesos)	53,880	53,400	52,800	52,200	51,600	51,000	50,400	49,800	49,200	48,600
2. Total costs (1)+2)+3)+4)+5)+6))	98,773	100,890	103,009	105,255	106,994	108,842	110,802	112,881	115,083	117,415
3. Profit (Revenue - Total cost = total cost*4%)	3,951	4,036	4,120	4,210	4,280	4,354	4,432	4,515	4,603	4,697
4. Cash flow (4) + 5) + 3.)	19,506	21,002	22,568	24,213	25,276	26,393	27,566	28,800	30,095	31,457
5. Sale energy (MWh)	403,564	439,360	480,518	521,884	566,035	614,626	663,216	715,648	772,225	833,275
6. Average power rate (P/kWh):(1/5).	0.25	0.24	0.22	0.21	0.20	0.18	0.17	0.16	0.15	0.15
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.11	0.09	0.06	0.04	0.02	-0.00	-0.02	-0.04	-0.06	-0.08

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

-- Borrowing, Sound Value --

(Unit: thousand pesos)

Dorelco	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	14,231	14,659	15,093	15,553	15,912	16,292	16,693	17,117	17,564	18,036
2. Costs										
1) Maintenance *1	2,895	3,039	3,191	3,351	3,518	3,694	3,879	4,073	4,277	4,490
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (Year-end) (449 mil. P)	54,688	52,802	50,917	49,031	47,145	45,259	43,373	41,488	39,602	37,716
4) Depreciation cost (3.3%)	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886	1,886
Capital investment	3,338	7,998	8,398	8,818	5,633	5,915	6,210	6,521	6,847	7,189
5) Σ-Depreciation (Capital investment *3.3%)	111	378	658	952	1,140	1,337	1,544	1,761	1,989	2,229
6) Interest payments on borrowings (12%)	6,789	6,728	6,653	6,577	6,502	6,426	6,350	6,275	6,199	6,124
2. Total costs (1)+2)+3)+4)+5)+6))	13,684	14,095	14,513	14,955	15,300	15,665	16,051	16,458	16,889	17,343
3. Profit (revenue - total cost = total cost*4%)	547	564	581	598	612	627	642	658	676	694
4. Cash flow (4) + 5) + 3.)	2,544	2,827	3,124	3,436	3,637	3,849	4,072	4,305	4,551	4,808
5. Sale energy (MWh)	24,327	27,207	30,555	34,118	37,896	41,977	46,054	49,695	53,624	57,863
6. Average power rate (P/kWh):(1/5)	0.58	0.54	0.49	0.46	0.42	0.39	0.36	0.34	0.33	0.31
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.44	0.39	0.33	0.29	0.24	0.20	0.17	0.14	0.11	0.09

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

-- Borrowing, Sound Value --

(Unit: thousand pesos)

Leyeco II	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	6,325	6,515	6,709	6,913	7,083	7,261	7,448	7,645	7,851	8,067
2. Costs										
1) Maintenance *1	1,011	1,061	1,114	1,170	1,229	1,290	1,355	1,422	1,493	1,568
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end) (449 mil. P)	19,097	18,439	17,780	17,122	16,463	15,805	15,146	14,488	13,829	13,171
4) Depreciation cost (3.3%)	659	659	659	659	659	659	659	659	659	659
Capital investment	1,166	2,793	2,933	3,079	1,967	2,065	2,169	2,277	2,391	2,511
5) Σ -Depreciation (Capital investment *3.3%)	39	132	230	332	398	467	539	615	695	778
6) Interest payments on borrowings (12%)	2,371	2,350	2,323	2,297	2,270	2,244	2,218	2,191	2,165	2,138
2. Total costs (1)+2)+3)+4)+5)+6))	6,082	6,265	6,451	6,647	6,810	6,982	7,162	7,351	7,549	7,757
3. Profit (revenue - total cost = total cost*4%)	243	251	258	266	272	279	286	294	302	310
4. Cash flow (4) + 5) + 3.)	941	1,041	1,146	1,257	1,329	1,405	1,484	1,568	1,655	1,747
5. Sale energy (MWh)	126,230	133,909	143,170	152,661	162,760	174,213	184,252	198,818	214,536	231,497
6. Average power rate (P/kWh):(1/5)	0.05	0.05	0.05	0.05	0.04	0.04	0.04	0.04	0.04	0.03
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	-0.09	-0.10	-0.11	-0.12	-0.13	-0.14	-0.15	-0.16	-0.18	-0.19

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

- Borrowing. Sound Value -

(Unit: thousand pesos)

Leveco III	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	9,989	10,289	10,595	10,917	11,174	11,446	11,732	12,034	12,352	12,687
2. Costs										
1) Maintenance *1	1,884	1,978	2,077	2,181	2,290	2,404	2,524	2,651	2,783	2,922
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (Year-end) (449 mil. P)	35,591	34,363	33,136	31,909	30,682	29,454	28,227	27,000	25,773	24,545
4) Depreciation cost (3.3%)	1,227	1,227	1,227	1,227	1,227	1,227	1,227	1,227	1,227	1,227
Capital investment	2,173	5,205	5,465	5,739	3,666	3,849	4,042	4,244	4,456	4,679
5) Σ-Depreciation (Capital investment *3.3%)	72	246	428	619	742	870	1,005	1,146	1,295	1,451
6) Interest payments on borrowings (12%)	4,418	4,379	4,330	4,280	4,231	4,182	4,133	4,084	4,034	3,985
2. Total costs (1)+2)+3)+4)+5)+6))	9,605	9,893	10,187	10,497	10,744	11,006	11,281	11,571	11,877	12,199
3. Profit (revenue - total cost = total cost*4%)	384	396	407	420	430	440	451	463	475	488
4. Cash flow (4) + 5) + 3.)	1,684	1,869	2,063	2,267	2,399	2,537	2,683	2,836	2,997	3,166
5. Sale energy (MWh)	13,424	14,951	16,530	18,087	19,642	21,254	22,787	24,589	26,533	28,630
6. Average power rate (P/kWh):(1/5)	0.74	0.69	0.64	0.60	0.57	0.54	0.51	0.49	0.47	0.44
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.60	0.54	0.48	0.44	0.39	0.35	0.32	0.29	0.25	0.22

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

-- Borrowing, Sound Value --

(Unit: thousand pesos)

Leveco IV

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	12,881	13,268	13,662	14,078	14,405	14,750	15,115	15,500	15,906	16,334
2. Costs										
1) Maintenance *1	2,573	2,702	2,837	2,979	3,127	3,284	3,448	3,620	3,801	3,992
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end) (449 mil. P)	48,612	46,935	45,259	43,583	41,907	40,230	38,554	36,878	35,202	33,525
4) Depreciation cost (3.3%)	1,676	1,676	1,676	1,676	1,676	1,676	1,676	1,676	1,676	1,676
Capital investment	2,968	7,110	7,465	7,838	5,007	5,257	5,520	5,796	6,086	6,390
5) Σ -Depreciation (Capital investment *3.3%)	99	336	585	846	1,013	1,188	1,372	1,565	1,768	1,981
6) Interest payments on borrowings (12%)	6,035	5,981	5,914	5,846	5,779	5,712	5,645	5,578	5,510	5,443
2. Total costs (1)+2)+3)+4)+5)+6))	12,386	12,758	13,137	13,536	13,851	14,183	14,533	14,903	15,294	15,706
3. Profit (revenue - total cost = total cost*4%)	495	510	525	541	554	567	581	596	612	628
4. Cash flow (4) + 5) + 3.)	2,271	2,522	2,786	3,064	3,243	3,432	3,630	3,838	4,056	4,286
5. Sale energy (MWh)	16,002	16,494	17,058	17,512	17,879	18,201	18,364	19,816	21,383	23,073
6. Average power rate (P/kWh):(1/5)	0.80	0.80	0.80	0.80	0.81	0.81	0.82	0.78	0.74	0.71
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.66	0.65	0.64	0.64	0.63	0.63	0.63	0.58	0.53	0.48

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

-- Borrowing, Sound Value --

(Unit: thousand pesos)

Leveco V

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	15,002	15,453	15,911	16,396	16,773	17,173	17,595	18,041	18,512	19,009
2. Costs										
1) Maintenance *1	3,078	3,232	3,394	3,564	3,742	3,929	4,125	4,332	4,548	4,776
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end) (449 mil. P)	58,160	56,155	54,149	52,144	50,138	48,133	46,127	44,122	42,116	40,111
4) Depreciation cost (3.3%)	2,006	2,006	2,006	2,006	2,006	2,006	2,006	2,006	2,006	2,006
Capital investment	3,550	8,506	8,931	9,378	5,991	6,290	6,605	6,935	7,282	7,646
5) Σ -Depreciation (Capital investment *3.3%)	118	402	700	1,012	1,212	1,422	1,642	1,873	2,116	2,370
6) Interest payments on borrowings (12%)	7,220	7,156	7,075	6,995	6,914	6,834	6,754	6,673	6,593	6,512
2. Total costs (1)+2)+3)+4)+5)+6))	14,425	14,859	15,299	15,765	16,128	16,512	16,918	17,347	17,800	18,278
3. Profit (revenue - total cost = total cost*4%)	577	594	612	631	645	660	677	694	712	731
4. Cash flow (4) + 5) + 3.)	2,701	3,002	3,317	3,648	3,863	4,088	4,324	4,572	4,833	5,107
5. Sale energy (MWh)	87,106	92,205	97,794	102,954	107,973	112,800	116,970	126,217	136,195	146,963
6. Average power rate (P/kWh):(1/5)	0.17	0.17	0.16	0.16	0.16	0.15	0.15	0.14	0.14	0.13
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost.(P/kWh)	0.03	0.02	0.00	-0.01	-0.02	-0.03	-0.04	-0.06	-0.08	-0.09

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

— Borrowing, Sound Value —

(Unit: thousand pesos)

Soleco	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	10,375	10,686	11,004	11,338	11,605	11,886	12,183	12,496	12,826	13,173
2. Costs										
1) Maintenance *1	1,976	2,074	2,178	2,287	2,401	2,522	2,648	2,780	2,919	3,065
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end) (449 mil. P)	37,327	36,040	34,753	33,465	32,178	30,891	29,604	28,317	27,030	25,743
4) Depreciation cost (3.3%)	1,287	1,287	1,287	1,287	1,287	1,287	1,287	1,287	1,287	1,287
Capital investment	2,279	5,459	5,732	6,019	3,845	4,037	4,239	4,451	4,673	4,907
5) Σ-Depreciation (Capital investment *3.3%)	76	258	449	650	778	912	1,054	1,202	1,358	1,521
6) Interest payments on borrowings (12%)	4,634	4,592	4,541	4,489	4,438	4,386	4,334	4,283	4,231	4,180
2. Total costs (1)+2)+3)+4)+5)+6))	9,976	10,275	10,580	10,902	11,159	11,429	11,715	12,016	12,333	12,667
3. Profit (revenue - total cost = total cost*4%)	399	411	423	436	446	457	469	481	493	507
4. Cash flow (4) + 5) + 3.)	1,762	1,956	2,159	2,373	2,511	2,657	2,809	2,970	3,138	3,315
5. Sale energy (MWh)	19,525	20,513	21,584	22,498	23,241	23,925	24,377	26,305	28,384	30,628
6. Average power rate (P/kWh):(1/5)	0.53	0.52	0.51	0.50	0.50	0.50	0.50	0.48	0.45	0.43
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.39	0.37	0.35	0.34	0.32	0.31	0.31	0.27	0.24	0.21

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

-- Borrowing, Sound Value --

(Unit: thousand pesos)

Bileco	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	3,240	3,338	3,437	3,541	3,637	3,737	3,841	3,948	4,061	4,177
2. Costs										
1) Maintenance *1	276	289	304	319	335	352	369	388	407	428
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end)(449 mil. P)	5,208	5,029	4,849	4,670	4,490	4,310	4,131	3,951	3,772	3,592
4) Depreciation cost (3.3%)	180	180	180	180	180	180	180	180	180	180
Capital investment	318	762	800	840	536	563	591	621	652	685
5) Σ -Depreciation (Capital investment *3.3%)	11	36	63	91	109	127	147	168	189	212
6) Interest payments on borrowings (12%)	647	641	634	626	619	612	605	598	590	583
2. Total costs (1)+2)+3)+4)+5)+6))	3,116	3,209	3,305	3,405	3,497	3,593	3,693	3,797	3,904	4,016
3. Profit (revenue - total cost = total cost*4%)	125	128	132	136	140	144	148	152	156	161
4. Cash flow (4) + 5) + 3.)	315	344	374	406	428	451	474	499	525	553
5. Sale energy (MWh)	7,985	8,832	9,750	10,730	11,859	13,188	14,670	15,830	17,081	18,432
6. Average power rate (P/kWh):(1/5)	0.41	0.38	0.35	0.33	0.31	0.28	0.26	0.25	0.24	0.23
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.26	0.23	0.19	0.16	0.13	0.10	0.07	0.05	0.02	0.00

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

— Borrowing, Sound Value —

(Unit: thousand pesos)

Samecco I	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	10,953	11,282	11,617	11,970	12,251	12,547	12,860	13,189	13,537	13,903
2. Costs										
1) Maintenance *1	2,114	2,219	2,330	2,447	2,569	2,697	2,832	2,974	3,123	3,279
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end) (449 mil. P)	39,931	38,554	37,177	35,800	34,423	33,046	31,669	30,293	28,916	27,539
4) Depreciation cost (3.3%)	1,377	1,377	1,377	1,377	1,377	1,377	1,377	1,377	1,377	1,377
Capital investment	2,438	5,840	6,132	6,439	4,113	4,319	4,535	4,761	4,999	5,249
5) Σ -Depreciation (Capital investment *3.3%)	81	276	480	695	832	976	1,127	1,286	1,452	1,627
6) Interest payments on borrowings (12%)	4,957	4,913	4,858	4,802	4,747	4,692	4,637	4,582	4,526	4,471
2. Total costs (1)+2)+3)+4)+5)+6))	10,532	10,848	11,170	11,510	11,780	12,065	12,365	12,682	13,016	13,368
3. Profit (revenue - total cost = total cost * 4%)	421	434	447	460	471	483	495	507	521	535
4. Cash flow (4) + 5) + 3.)	1,879	2,087	2,304	2,532	2,680	2,836	2,999	3,170	3,350	3,539
5. Sale energy (MWh)	35,386	42,170	50,691	59,499	69,919	82,368	96,694	104,339	112,587	121,488
6. Average power rate (P/kWh):(1/5)	0.31	0.27	0.23	0.20	0.18	0.15	0.13	0.13	0.12	0.11
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.17	0.12	0.07	0.03	-0.00	-0.03	-0.06	-0.08	-0.09	-0.11

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

-- Borrowing, Sound Value --

(Unit: thousand pesos)

Samejco II

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	10,375	10,686	11,004	11,338	11,605	11,886	12,183	12,496	12,826	13,173
2. Costs										
1) Maintenance *1	1,976	2,074	2,178	2,287	2,401	2,522	2,648	2,780	2,919	3,065
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -Increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end) (449 mil. P)	37,327	36,040	34,753	33,465	32,178	30,891	29,604	28,317	27,030	25,743
4) Depreciation cost (3.3%)	1,287	1,287	1,287	1,287	1,287	1,287	1,287	1,287	1,287	1,287
Capital investment	2,279	5,459	5,732	6,019	3,845	4,037	4,239	4,451	4,673	4,907
5) Σ -Depreciation (Capital investment *3.3%)	76	258	449	650	778	912	1,054	1,202	1,358	1,521
6) Interest payments on borrowings (12%)	4,634	4,592	4,541	4,489	4,438	4,386	4,334	4,283	4,231	4,180
2. Total costs (1)+2)+3)+4)+5)+6))	9,976	10,275	10,580	10,902	11,159	11,429	11,715	12,016	12,333	12,667
3. Profit (revenue - total cost = total cost*4%)	399	411	423	436	446	457	469	481	493	507
4. Cash flow (4) + 5) + 3.)	1,762	1,956	2,159	2,373	2,511	2,657	2,809	2,970	3,138	3,315
5. Sale energy (MWh)	24,096	25,713	27,404	28,975	30,437	31,793	32,841	35,437	38,239	41,262
6. Average-power rate (P/kWh):(1/5)	0.43	0.42	0.40	0.39	0.38	0.37	0.37	0.35	0.34	0.32
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.29	0.26	0.24	0.22	0.21	0.19	0.18	0.15	0.12	0.10

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

-- Borrowing, Sound Value --

(Unit: thousand pesos)

Norsameico	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
I. Revenue	13,846	14,261	14,684	15,131	15,481	15,851	16,242	16,655	17,090	17,550
2. Costs										
1) Maintenance *1	2,803	2,943	3,090	3,244	3,407	3,577	3,756	3,944	4,141	4,348
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end) (449 mil. P)	52,952	51,126	49,300	47,474	45,648	43,822	41,996	40,171	38,345	36,519
4) Depreciation cost (3.3%)	1,826	1,826	1,826	1,826	1,826	1,826	1,826	1,826	1,826	1,826
Capital investment	3,232	7,744	8,132	8,538	5,454	5,727	6,013	6,314	6,630	6,961
5) Σ -Depreciation (Capital investment *3.3%)	108	366	637	922	1,103	1,294	1,495	1,705	1,926	2,158
6) Interest payments on borrowings (12%)	6,573	6,515	6,442	6,368	6,295	6,222	6,149	6,076	6,002	5,929
2. Total costs (1)+2)+3)+4)+5)+6))	13,313	13,713	14,120	14,549	14,886	15,242	15,617	16,014	16,433	16,875
3. Profit (revenue - total cost = total cost*4%)	533	549	565	582	595	610	625	641	657	675
4. Cash flow (4) + 5) + 3.)	2,466	2,740	3,028	3,329	3,525	3,730	3,945	4,172	4,409	4,659
5. Sale energy (MWh)	26,253	30,260	35,172	40,927	47,621	55,246	63,801	68,845	74,287	80,160
6. Average power rate (P/kWh):(1/5)	0.53	0.47	0.42	0.37	0.33	0.29	0.25	0.24	0.23	0.22
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.38	0.32	0.26	0.20	0.15	0.10	0.06	0.04	0.02	-0.00

Operation and Maintenance Cost of 69kV TL Facility for each EC - Option2

— Borrowing, Sound Value —

(Unit: thousand pesos)

Esamelco

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1. Revenue	12,110	12,474	12,844	13,235	13,543	13,869	14,213	14,575	14,958	15,362
2. Costs										
1) Maintenance *1	2,389	2,509	2,634	2,766	2,904	3,049	3,202	3,362	3,530	3,706
2) Personnel cost(Ave. nos of staff:10 employees) -8,000 pesos per month per employee in 1996 -increase at a rate of 3 percent annually	1,113	1,146	1,181	1,216	1,253	1,290	1,329	1,369	1,410	1,452
3) Administrative costs (2) Personnel cost x 80%)	890	917	945	973	1,002	1,032	1,063	1,095	1,128	1,162
69kV facility fixed assets balance (year-end)(449 mil. P)	45,139	43,583	42,026	40,470	38,913	37,357	35,800	34,244	32,687	31,131
4) Depreciation cost (3.3%)	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557	1,557
Capital investment	2,756	6,602	6,932	7,278	4,649	4,882	5,126	5,382	5,651	5,934
5) Σ -Depreciation (Capital investment *3.3%)	92	312	543	786	941	1,103	1,274	1,454	1,642	1,840
6) Interest payments on borrowings (12%)	5,604	5,554	5,491	5,429	5,366	5,304	5,242	5,179	5,117	5,054
2. Total costs (1)+2)+3)+4)+5)+6))	11,644	11,994	12,350	12,726	13,022	13,335	13,666	14,015	14,383	14,771
3. Profit (revenue - total cost = total cost*4%)	466	480	494	509	521	533	547	561	575	591
4. Cash flow (-4) + 5) + 3.)	2,114	2,348	2,594	2,851	3,018	3,193	3,377	3,571	3,774	3,987
5. Sale energy (MWh)	23,231	27,105	30,811	33,923	36,808	39,663	42,405	45,758	49,375	53,279
6. Average power rate (P/kWh):(1/5)	0.52	0.46	0.42	0.39	0.37	0.35	0.34	0.32	0.30	0.29
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22
8. Net Cost (P/kWh)	0.38	0.31	0.26	0.22	0.19	0.17	0.14	0.12	0.09	0.06

Operation and Maintenance Cost of 69kV TL Facility for 11 ECs - Option3

- Borrowing, Sound Value -

	(Unit: thousand pesos)										
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
1. Revenue	88,141	89,905	91,658	93,529	94,860	96,289	97,821	99,460	101,213	103,084	
2. Costs											
1) Maintenance	15,315	16,081	16,885	17,729	18,616	19,547	20,524	21,550	22,628	23,759	
2) Personnel cost(Nos. of staff: 0 employees) -Staffs will be same as DL staffs	0	0	0	0	0	0	0	0	0	0	0
3) Administrative costs (personnel costs x 80%)	0	0	0	0	0	0	0	0	0	0	0
69kV facility fixed assets balance (year-end) (449 mil. P in 1996)	434,033	419,067	404,100	389,133	374,167	359,200	344,233	329,267	314,300	299,335	
4) Depreciation cost (3.3%)	14,967	14,967	14,967	14,967	14,967	14,967	14,967	14,967	14,967	14,967	
Capital investment	17,664	42,319	44,435	46,657	29,804	31,294	32,859	34,502	36,227	38,038	
5) Σ -Depreciation (Capital investment *3.3%)	589	1,999	3,481	5,036	6,029	7,072	8,168	9,318	10,525	11,793	
6) Interest payments on borrowings (12%) (balance of 449 million pesos.)	53,880	53,400	52,800	52,200	51,600	51,000	50,400	49,800	49,200	48,600	
2. Total costs (1)+2)+3)+4)+5)+6))	84,751	86,447	88,132	89,932	91,212	92,586	94,058	95,635	97,320	99,119	
3. Profit (Revenue - Total cost = total cost *4%)	3,390	3,458	3,525	3,597	3,648	3,703	3,762	3,825	3,893	3,965	
4. Cash flow (4) + 5) + 3.)	18,945	20,424	21,973	23,600	24,644	25,743	26,897	28,110	29,385	30,725	
5. Sale energy (MWh)	403,564	439,360	480,518	521,884	566,035	614,626	663,216	715,648	772,225	833,275	
6. Average power rate (P/kWh):(1/5)	0.22	0.20	0.19	0.18	0.17	0.16	0.15	0.14	0.13	0.12	
7. NPC Delivery charge (P/kWh)	0.14	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	
8. Net cost (P/kWh)	0.07	0.05	0.03	0.01	-0.01	-0.03	-0.05	-0.06	-0.08	-0.10	

8.3 Preparation of a Draft Plan for Execution of the Transfer of 69 kV Transmission Lines

The option of transfer of the 69 kV transmission lines to an amalgamation of the 11 ECs is rated as the best for pursuit of business efficiency, stability of facility operation, and progress along the path of privatization in the Philippine power sector. Nevertheless, it is thought to be difficult to practice in reality for the reasons noted in Section 8.2. As such, it was decided to draft an action plan on the assumption of continued existence of the 11 ECs in the current setup and transfer of the facilities to a new transmission cooperative.

This draft plan for implementation of the transfer to a new transmission cooperative is described below. The plan may be divided into two stages. The first stage is the period leading up to and including the establishment of the new cooperative. The second stage covers the operation of the new cooperative and its placement on commercial footing. Figure 8.3-1 presents a conceptual diagram of this plan.

8.3.1 Stage I (1998 – 2000) Implementation Plan

Lasting from 1998 to 2000, this stage would be devoted to preparations for establishment of the new transmission cooperative. It would have to lay the foundation for the future business through measures such as the following: 1) attraction of participation in the new transmission cooperative, 2) establishment of an organ for conference, 3) preparation of the organizational setup, 4) negotiation with the NPC, 5) formulation of business policy, and 6) training of engineers. These steps would have to be completed in advance of commencement of operations in 2001.

The basic policy and concerns for each of these measures are outlined below.

1) Attraction of participation in the new transmission cooperative

Participation in the new transmission cooperative would center around the 11 ECs in the Leyte-Samar area. The cooperative would not exclude subscription by other enterprises.

2) Establishment of an organ for conference

An organ would have to be established for conference among the participants in the new transmission cooperative.

- Establishment of an organ for conference accompanying the transfer

The participants in the new transmission cooperative would have to be capable of efficient management of the future corporate business. To this end, an organ would be

established for conference and decision-making in the period leading up to establishment of the new cooperative. This organ would be composed of representatives of each of the participants.

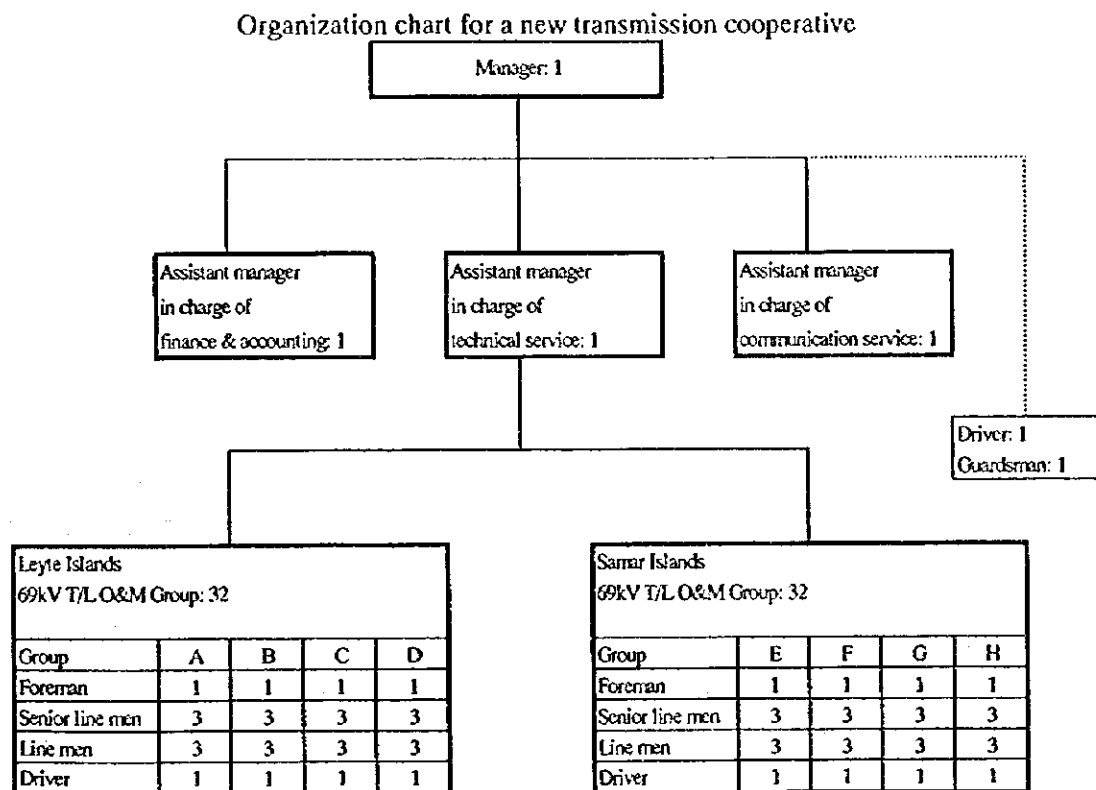
It would be the role of this organ to hammer out the orientation of the future new cooperative and to coordinate the interests of the participants. It would also have to take a leading role in price negotiations and other dealings with outside parties.

3) Preparation of the organizational setup

Because the new transmission cooperative would be separate from the ECs, it would require the recruitment of additional personnel and acquisition of additional land and building. The following is an account of the advisable type of organization, staff size, and property subsequent to commencement of commercial operations.

- Organization and staff

The new transmission cooperative would be a corporate entity engaged in the operation and maintenance of the 69 kV transmission lines. Considering the circumstances of the Leyte and Samar area, it would be advisable to have the technical division divided between one maintenance group on Leyte and another on Samar. The business division could set up a single administrative office on Leyte for control of both islands. The organizational setup is shown below.



Each of the maintenance groups on Leyte and Samar would be in charge of over 400 kilometers of transmission lines. Each should therefore consist of four subgroups, each subgroup consisting of one foreman, three senior line men, three line men, and one driver, for a total of eight. In other words, each maintenance group would have a staff of 32.

Besides the maintenance group employees, the administrative office on Leyte would be staffed with administrative personnel. These personnel would consist of one manager, one assistant manager in charge of accounting, one assistant manager in charge of technical service, one assistant manager in charge of communications service, one driver, and one guards man, for a total of six.

The maintenance subgroup leaders and skilled workers could be recruited through transfer from the NPC or other outside power companies (such as MERALCO and CEPALCO). The other personnel would be newly recruited.

The financial work could be commissioned to outside consultants.

- Facility (building) design and construction

In the case of construction of new facilities, the total cost inclusive of office furniture is estimated at about 16 million pesos. The assumption here is acquisition of land measuring 1,000 square meters and construction of a building with a floor area of 500 square meters for one office on Leyte and another on Samar.

4) Negotiation with the NPC

The outcome of the negotiation with the NPC will have a strong bearing on the management of the new transmission cooperative. The items of negotiation must be thoroughly researched and discussed in depth. These items include the division of assets between the NPC and the new cooperative, the transfer price, tariffs applied to power purchased from the NPC, and the approach to system operation.

- Assets division (between the NPC and the new cooperative as well as between the new cooperative and the ECs)

As described in Section 7.1, the division of assets between the NPC and the new cooperative would basically be made at the outlet for the 69 kV transmission lines of the 138/69 kV substations, because the subject of the transfer would be confined to the 69 kV transmission lines. However, the detailed division would have to be determined through negotiation with the NPC.

The division of assets between the new transmission cooperative and the ECs would basically be made at the current point of division between the NPC and the ECs (i.e., the

primary-side ABS of 69/13.2 kV substations). The new cooperative and the ECs in question would have to confer about the division at locations where there is a need for integration in the interest of better system operation.

- Price negotiations with the NPC for the 69 kV facilities

The negotiations over the transfer price would be promoted in line with the determination of the division of assets. The negotiations must take account of the sound value presented in Table 7.4-1 (the price as of the end of 1996) as the basis for calculation of the transfer price. As a key point in the price negotiations, the new cooperative should emphasize the poor condition of the facilities.

It should be remembered that the price figures shown in Table 7.4-1 are as of 1996; the negotiations for transfer in 2001 would also have to take account of factors at work over the intervening years, including the cost of rehabilitation carried out by the NPC, the increase due to inflation, and the decrease due to depreciation.

The price to be applied in the transfer must be determined together with the NPC by the time of the commencement of operations by the new transmission cooperative in 2001.

- Contract for tariff rates in purchase of power from the NPC

The rates applied in power purchase from the NPC will have a great impact on the balance of operating payments at the new cooperative. The contract should be based on the rates in the new unbundled power tariff system, with discounting for the sub-transmission delivery charge (11.31 centavos per kWh at the time of application for approval of the new system in 1997).

- Approach to system operation

Because the system must be operated in accordance with the NPC commands, the new transmission cooperative must establish schemes for liaison and operation with the NPC and the 11 ECs in advance.

5) Formulation of business policy

Specific policy for business management regarding items such as organization, staffing, and wholesale power tariffs must be formulated by the participating ECs in order to lay the groundwork needed for placement of the transmission cooperative operation on commercial footing.

- Formulation of business policy

The business of the new transmission cooperative would lie in operation and

maintenance of the 69 kV transmission lines on Leyte and Samar. As a matter of policy, it would work for stable supply of power to the ECs with as little outage as possible. It would also strive for high levels of efficiency in order to keep the tariff in wholesale power supply to the ECs on reasonable levels.

- Preparations for establishment, procurement of funds for the transfer, and method of repayment

About 500 million pesos must be procured for the purchase of the facilities. Moreover, it must be through low-interest financing; operating costs would be driven up greatly by borrowing from commercial banks at interest rates of 28 - 30 percent. As such, the ECs should obtain low-interest (12-percent) funding from the NEA.

Regarding the establishment, the 11 ECs will make outlays for the new T/L cooperative in 1999, the year before the establishment. Considering items such as profitability and the equity rate, it would be adequate for the new cooperative to be capitalized at about 30 million pesos. The ECs must also consider borrowing operating funds and funds for the facilities. The amount of borrowing for operating funds must be curtailed by efforts to achieve a parity between sales credits and purchasing debts. Repayments will depend on the cash flow, and will be made each year. For these reasons, the net profit rate is set at 4 percent of the total cost.

The party in charge of accounts and financing will have a vital role to play in establishment of the new T/L cooperative. Because the business will resemble that of the existing ECs, it will be possible to procure such a party for the new T/L cooperative. To cut costs, this party will employ external staff on a temporary basis. Personnel expenses should be held down through support from the 11 ECs.

- Determination of tariff in wholesale supply to the 11 ECs

The tariff applied in wholesale supply of power to the ECs would vary depending on that applied in purchase of power by the cooperative from the NPC. Essentially, the calculation would be based on the sum of the cost to the new cooperative plus margin. The study team estimates this tariff at 0.25 pesos per kWh in 2001. The exact price would have to be determined through the conference organ.

6) Training of technicians

An additional 70 technicians would have to be hired for operation and maintenance of the

69 kV transmission lines. With the exception of skilled workers transferred from the NPC or other enterprises, these personnel would have to be trained for this work. This training could be consigned to the NPC or other electric power enterprises.

8.3.2 Stage II (2001 -) Implementation Plan

Stage II would begin upon the establishment of the new transmission cooperative. During this stage, the cooperative would have to concentrate on activities for maintenance of the 69 kV transmission facilities, which it would be in charge of actually operating. It would also have to hire technicians and prepare and execute a training program to improve their capabilities of operation, maintenance, and management.

- Plans for rehabilitation of 69 kV transmission lines

The new cooperative must prepare plans for the rehabilitation of the 69 kV transmission lines, which would continue to 2010. For the first five years of this period, the plans would be concerned mainly with the lines supplying Leyeco II, Leyeco V, and Samelco II, which have large demands to meet, in order to secure a substantial sales volume. Thereafter, rehabilitation would proceed to the upstream lines close to the 138/69 kV source substations, beginning with those in the worst condition.

- Plans for maintenance of the 69 kV transmission lines

To maintain the 69 kV transmission lines in operational condition requires the implementation of periodic inspection through patrols of the roughly 900 kilometers of routes, as well as systematic performance of the necessary maintenance and ROW work. Because the 69 kV transmission lines are spread throughout Leyte and Samar islands, the preparation of the plans must take account of the need for execution of maintenance work on a routine basis.

- Establishment of the maintenance and operation setup

A setup for maintenance and operation must be established, also for sure execution of the maintenance plans as noted above. Assuming that the maintenance group on each island would consist of four subgroups, one subgroup could make the patrol inspections while the other three are assigned to ordinary duty, quasi-night duty, and emergency duty. In addition, measures should be taken to prevent a deterioration of the labor environment. For example, the patrol inspection work could be rotated in units of months, and the other kinds of work, in units of days.

- Business operation

To improve efficiency, the new transmission cooperative must strictly evaluate the performance of personnel. It must also clearly define the scope of duties in the interest of smooth management of the organization. And beginning in 2001, it must take steps such as replacement of retirees with OB technicians from the NPC and ECs in order to hold down personnel expenses.

Similarly, the new cooperative should consider purchase of supplies that are also needed by ECs jointly with them as far as possible in order to hold down costs. At the same time, it must thoroughly analyze the level of price relative to performance based on estimates requested from competing suppliers and work to reduce purchasing costs.

- Preparation of a training program

Even after the establishment of the transmission cooperative, it would be advisable to provide training periodically in order to maintain and improve technical capabilities. The new cooperative also must prepare and implement training programs for individual technicians in order to develop personnel for technical supervision and to improve the capabilities of young technicians through OJT.

- Reinforcement of the disposition of ECs

As related in Section 9.3.3, if the new transmission cooperative raises funds by borrowing, it would have to hike its wholesale price for the first five years after establishment. The cooperative would have to do its utmost to curb any such hike.

In reality, however, the hike would presumably be absorbed by the ECs; ordinary customers would not accept a direct reflection of the same in prices to them. As such, the ECs would have to absorb it through their own efforts. More specifically, the 11 ECs would have to promote higher levels of efficiency and rationality, and also consider the option of amalgamation if that is necessary to adapt to changes in the business environment.

Figure 8.3 Scenario for Implementation

