Folder Title:	China - Taiwan - Power 3 - Report 2686
Folder ID:	1048059
Series:	Completion Reports and Audit Reports
Dates:	07/11/1979 – 10/19/1979
Fonds:	Records of the Office of Operations Evaluation
ISAD Reference Code:	WB IBRD/IDA OPE-06
Digitized:	06/11/2025

CHINA - Third Power (Ln. 749-CH)

October 19, 1979

Chairman of the Council for Economic
Cooperation and Development
Taipei, Taiwan
Republic of China

Dear Mr. Minister:

Re: Project Performance Audit Report on China -
Third Power Project (Loan 749-CH)

Thank you for your telex of August 20, 1979, and for your comments on the above report. The report has been revised in the light of comments received from you, the Taiwan Power Co., and Bank staff concerned with the project. The points you mentioned in your telex have been taken into account in para. 8.

I am now pleased to send you a copy of the final version of the report, which was distributed to the Executive Directors on October, 9, 1979.

Yours sincerely,

Shiv S. Kapur
Director
Operations Evaluation Department

Attachment

G.B.
EBowers:cmn

October 19, 1979

Dr. David S.L. Chu
President
Taiwan Power Co. (Taipower)
39 East Hoping Road, Section 1
Taipei 106, Taiwan
Republic of China

Dear Dr. Chu:

Re: Project Performance Audit Report on China - Third Power Project (Loan 749-CH)

Thank you for your letter of August 16, 1979, and for your comments on the above report. The report has been revised in the light of comments received from you, the Government and Bank staff concerned with the project.

I am now pleased to send you a copy of the final version of the report, which was distributed to the Executive Directors on October 9, 1979.

Yours sincerely,

Shiv S. Kapur
Director
Operations Evaluation Department

Attachment

G.B.
EBowers:cmn

October 19, 1979

His Excellency Walter Fei
Minister of Finance
Ministry of Finance
Taipei, Taiwan
Republic of China

Dear Mr. Minister:

Re: Project Performance Audit Report on: China - Third Power Project (Loan 749-CH)

Thank you for your telex of August 21, 1979. The above report has been revised in the light of comments received from Taiwan Power Co., the Council for Economic Planning and Development and Bank staff concerned with the project.

I am now pleased to send you a copy of the final version of the report, which was distributed to the Executive Directors on October 9, 1979.

Yours sincerely,

Shiv S. Kapur
Director
Operations Evaluation Department

Attachment

6.B
EBowers:lcg

Ok. to print.
9/28

October 5, 1979

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Performance Audit Report - China: Third Power Project (Loan 749-CH)

Attached, for information, is a copy of a report entitled "Project Performance Audit Report - China: Third Power Project" prepared by the Operations Evaluation Department.

Mervyn L. Weiner

by Shiv S. Kapur

Attachment

Received Oct. 4 -
Read to Ester
(Mr. Kapur's office)
on oct. 4 may

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. Mervyn L. Weiner, Director General, Operations Evaluation

DATE: October 1, 1979

FROM: F. H. Howell, Assistant Director, AEPDR F.H.H.

SUBJECT: Project Performance Audit Report on China: Third Power Project (Loan 749-CHA)

With reference to the Performance Audit Report on China, the East Asia and Pacific Regional Office has no comments to make on the final draft PPAR in respect of the above project.

JCavallotti:gd

Cleared and cc: Mr. D. Loos
cc: Messrs. W. C. Baum
S. S. Husain
S. S. Kirmani
J. Cavallotti

→ SK

→ Bates to handle
KB
9/25

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. Mervyn L. Weiner, Director-General, DGO ✓ DATE: September 19, 1979

FROM: Kenneth A. Bohr, Acting Director, OED KAB

SUBJECT: Project Performance Audit Report on China: Third Power Project (Loan 749-CH)

I am attaching for your approval the Performance Audit Report on China: Third Power Project supported by Loan 749-CH. Comments received from Central Projects Staff, East Asia and Pacific Regional Office, the Government and the Borrower have been taken into account.

Attachment

→ Mr Bohr:

cc: Messrs. Baum, CPSVP
Husain, AENVP

Stern 9/21

See P. iii and 3

otherwise ok

W 9/21

Stern

Huss
Baum

1215
9/24

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

TO: Mr. Mervyn L. Weiner, Director-General, DGO

DATE: September 19, 1979

FROM: Kenneth A. Bohr, Acting Director, OED KAB

SUBJECT: Project Performance Audit Report on China: Third Power Project (Loan 749-CH)

I am attaching for your approval the Performance Audit Report on China: Third Power Project supported by Loan 749-CH. Comments received from Central Projects Staff, East Asia and Pacific Regional Office, the Government and the Borrower have been taken into account.

Attachment

cc: Messrs. Baum, CPSVP
Husain, AENVP

FORM NO. 80
(3-75)

WORLD BANK GROUP
MESSAGES

DATE 10/4

TIME 4:22

TO Rosa

FROM Maria Ines

DEPT./OFFICE

PHONE

EXTENSION

- [x] CALLED
- [ ] CAME TO SEE YOU
- [ ] RETURNED YOUR CALL
- [ ] REQUESTS APPOINTMENT
- [ ] CALL BACK
- [ ] WILL CALL AGAIN
- [ ] URGENT

REMARKS Re: China - Third Power Project
(Loan 749)

She received a memo addressed to Mr. Weiner from Mr. Howell stating that East Asia (AEP) has no comment on the above project.

RECEIVED BY Ester

64145 WORLDBANK
11520 TAIPOWER (Tlx Nr.) From: Taipei sj

11520 TLX TO 64145 WORLDBANK WASHINGTON DC 7'- 9-14-79

IBRD-5359

SUBJ: THIRD POWER PROJECT (LOAN 749-CHA)

ATTN : MR SHIV S KAPUR N-1139

REURTLX SEPTEMBER 4, 1979
AAA FOUR CONSULTANTS, GIBBS AND HILL FOR TALIN NO. 5, COMMONWEALTH FOR EXTRA HIGH VOLTAGE, COMPUTER SCIENCE FOR ON-LINE LOAD DISPATCH AND CONTROL, AND CONSORTIUM MING FOR MINGTAN PUMPED STORAGE PHASE II, WITH A TOTAL AMOUNT OF USDLRS 3,875,720.30 (PLS REFER TO PAGE A6 OF YOUR DRAFT PROJECT PERFORMANCE AUDIT REPORT) UNDER THE SUBJECT LOAN HAD BEEN ENGAGED IN ENGINEERING SERVICES ONLY AND THERE IS NO OTHER CONSULTANT OF FINANCIAL SYSTEM PLANNING STUDY AND NO SPECIFIED ITEM AND AMOUNT TO BE FOUND IN THIS LOAN AGREEMENT (749-CHA) SIGNED ON JUNE 11, 1971. FINALLY WE FOUND USDLRS 0.4 MILLION FOR CONSULTING SERVICES WAS LISTED IN ANNEX 4 PAGE 1 OF YOUR '⍝'⍝APPRAISAL OF THE THIRD POWER PROJECT, APRIL 12, 1971,'⍝'⍝ AND PERHAPS THIS IS PROBABLY WHY WE ARE REQUESTED IN AAA OF YOUR TELEX. HOWEVER, A CONSULTANT, GILBERT ASSOCIATES INC., HAD BEEN SELECTED AND APPROVED BY WORLDBANK TO CARRY OUT:

(1) STUDY AND EVALUATION OF ACCOUNTING SYSTEM AND FINANCIAL MANAGEMENT

(2) DEVELOPMENT AND MANAGE A TRAINING PROGRAM FOR TAIPOWER PERSONNEL IN USA

FOR OUR COMPANY IN ACCORDANCE WITH SECTION 5.08(B) OF LOAN AGREEMENT OF FIRST POWER PROJECT (LOAN 574-CHA). THE SAID CONSULTANT COMPLETED THEIR WORK IN DECEMBER 1971, AND USDLRS 252,872.27 HAD BEEN USED UNDER LOAN 574-CHA, AND USDLRS 64,591.67 ALSO HAD BEEN USED UNDER LOAN 671-CHA. IN ORDER TO IMPROVE OUR FINANCIAL, ACCOUNTING AND MANAGEMENT SYSTEMS CONTINUOUSLY , GILBERT ASSOCIATES INC HAS BEEN ENGAGING IN THIS WORK EVER SINCE 1972, THE SERVICES COST OF FOREIGN CURRENCY PORTION FOR DIFFERENT WORK ITEMS SINCE THEN HAS BEEN FINANCED BY EXIMBANK OF USA. THE FOLLOWING WORKS WERE COMPLETED: DEVELOPMENT OF FINANCIAL MODEL IN MAY 1974, DEVELOPMENT OF FINANCIAL DATA BASE/REPORTING SYSTEM IN JANUARY 1975, DEVELOPMENT OF CASH MANAGEMENT SYSTEM IN JUNE 1976, DEVELOPMENT OF REAL PROPERTY MANAGEMENT SYSTEM IN DECEMBER 1977, DEVELOPMENT OF MATERIAL MANAGEMENT SYSTEM FEASIBILITY STUDY IN JUNE 1976 AND DEVELOPMENT OF MATERIAL MANAGEMENT SYSTEM IN JULY 1979. TO DATE, THE SERVICE COST OF FOREIGN CURRENCY PORTION TOTALLING USDLRS 1,063,000 WAS USED.

BBB IN TABLE OF PAGE A7 (GENERATION COST PER KWH OF TALIN NO. 5 VS SYSTEM AVERAGE), PRODUCTION (GWH) FOR CALENDAR YEAR 1978: TALIN NO. 5 3,421, SYSTEM 34,433: GENERATION COST (USDLRS MILL/KWH) FOR CALENDAR YEAR 1978: TALIN NO. 5 19.53, SYSTEM 19.26: GENERATION COST (USDLR MILL/KWH) OF WEIGHTED AVERAGE COST: TALIN NO. 5 17.83, SYSTEM 18.56.
(REMARKS: EXCHANGE RATE USDLR 1 EQUALS TO NTDLR 38.05 FOR 1976 AND 1977 AND USDLR 1 EQUALS TO NTDLR 36.05 FOR 1978.)
WE RECONFIRM THE FIGURES FOR 1976 AND 1977 ARE SAME AS THAT MENTIONED IN OUR LETTER IBRD-5283.

BEST REGARDS

DAVID S L CHU, PRESIDENT, TAIPOWER

END OF CALL

64145 WORLDBANK
11520 TAIPOWER

440098 WORLDBANK
11840 MOF

Project File ✓ N-1139

Mr. Pennisi

sd

To be reproduced in the PPAR.

Distribution:
Mr. S. Kapur

11840 MOF TLX TO 20433 THE WORLD BANK WASHINGTON DC 8/22

AUGUST 21, 1979

REF NO: 8165

ATTN: MR. SHIV S. KAPUR

THANK YOU FOR YOUR LETTER TO THIS MINISTRY DATED JULY 11, 1979 FORWARDING A COPY OF DRAFT PERFORMANCE AUDIT REPORT ON THE THIRD POWER PROJECT LOAN 749-CH. WE FOUND THAT THE SAID REPORT GENERALLY SATISFACTORY AND HAVE NO COMMENTS TO ADD.

C. C. CHANG, MINISTER OF FINANCE, TAIPEI, ROC

END

440098 WORLDBANK
11840 MOF
MMMM

1096
8/21

P. O. Box 171
Phone 3518011
Cable TAIPOWER
Telex 11520

台湾電力公司
TAIWAN POWER COMPANY
39 East Hoping Road, Section 1, Taipei 106, Republic of China

In Reply
Please Quote
IBRD-5283

August 16, 1979

Mr. Shiv S. Kapur, Acting Director
General Operations Evaluation
Int'l Bank for Reconstruction
and Development
1818 H Street, N.W.
Washington, D.C. 20433
U. S. A.

Subject: Third Power Project (Loan 749-CHA)
Project Performance Audit Report

Dear Mr. Kapur:

Reference is made to your letter dated July 11, 1979 with the draft of Project Performance Audit Report on the Third Power Project (Loan 749-CHA).

We are sending you herewith for your reference some new or correct figures as shown on pages No. ii, A7, A8, A9 and Annex 4, 5 6 of said report indicated by red ball pen mark. In addition, the construction of Lung Tan substation was already completed on June 28, 1979. We would like to recommend you making appropriate change of wordings on paragraphs 2 of page 2 and page A4 of the report.

Sincerely yours,

David SL Chu

David S. L. Chu
President

Encl. a/s

cc: Ministry of Finance (w/c)
Council for Economic Planning and Development (w/c)

ph/cp

440098 WORLDBANK

6110233PPR BR (Telex M=)

hc

BRASILIA DF   IPEA TLX NR 3810/79   140979

MR SHIV KAPUR

WORLD BANK - 1818 H STREET, NW

WASHINGTON DC 20433 - USA

UAPI-122/79 - RE: DRAFT PPAR LOAN 728.

YOUR DRAFT REVISED WITH CONCURRENCE OF ELETROSUL, DNAEE/MME AND SEPLAN/PR.

REGRET THAT, DESPITE EFFORTS, UNABLE TO RECEIVE ELETROBRAS'S COMMENTS WITHIN LAST ACCORDED SHEDULE. ADVISED THEY ARE REPLYING DIRECTLY YOUR LETTER OF AUGUST ADDRESSED ELETROBRAS/S PRESIDENT. EXPECTING COPY OF THEIR COMMENTS TO YOU, WHEN (IF REQUIRED) WE WILL TRANSMIT FURTHER COMMENTS, EVEN OUT OF A ACCORDED SHEDULE. CONSOLIDATION OF COMMENTS RECEIVED AND OURS LED US TO SUGGEST YOU FOLLOWING CHANGES, WHICH ARE REFERED TO PAGES AND PARA. NUMBERS OF YOUR DRAFT REPORT.

ONE) PAGE III, PARA. 4, 1ST SENTENCE:

ADD FOOTNOTE: THERE IS A GOVERNMENT'S DECISON FOR A POLICY OF GENERAL PRICE CONTROLLING AIMED TO DECREASE THE HIGH INFLATION RATE IN THE COUNTRY.

TWO) PAGE IV, PARA. 1, 5TH LINE:
SUBSTITUTE: ''INADEQUACY OF TARIFFS'' FOR ''PRESENT ENERGY TARIFF POLICY''.

THREE) PAGE IV, PARA. 2, 2ND LINE:
SUBSTITUTE: ''OVERCOME THE LACK OF'' FOR ''ESTABLISH AN ADEQUATE''.

FOUR) PAGE IV, PARA. 2, 10TH LINE:
SUBSTITUTE: ''INCOMPLETE PROJECT PREPARATION'' FOR ''PROJECT CHANGES REQUIRED''

FIVE) PAGE A.1, PARA. 1.3.1, 10TH LINE:
SUBSTITUTE: ''LACK OF'' FOR ''DEFFICIENT''.

SIX) PAGE A.4, PARA. 3.1.2, 2ND LINE:
SUBSTITUTE: ''LACK OF'' FOR ''DEFFICIENT''.

SEVEN) PAGE A.12, PARA. 5.2.1, 10TH LINE:
AFTER SENTENCE ENDING: ''...PACE WITH INFLATION (PARA. 5.4.3)
ADD FOOTNOTE: CURRENTLY THERE IS GOING ON A DIALOG, BETWEEN BANK AND BRAZILIAN AUTHORITIES, CONCERNING THE TARIFFS SUBJECT. A SPECIAL MISSION TO DISCUSS THIS MATTER IS ENVISAGED FOR MID SEPTEMBER.

EIGHT) PAGE A.13, PARA. 5.4.3, 4TH LINE:
SUBSTITUTE: ''HAS FAILLED TO'' FOR ''DID NOT''.

NINE) PAGE A.14, PARA. 6.2.3, 2ND LINE:

AFTER SENTENCE ENDING: ''...DATA FROM ELETROSUL'' ADD FOOTNOTE:

''CURRENTLY, AS ONE OF BANK'S ASSISTANCE RESULTS, THIS KIND OF DATA IS NORMALLY AVAILABLE''.

TEN) PAGE A.15, AFTER PARA. 7.1.2, ADD PARA. 7.2.

''THE IMPLEMENTATION OF A PROJECT WITH BANK'S FINANCIAL PARTICIPATION CAN BE MOST VALUABLE IN EFFECTS NOT EXPLICITLY FORESEEN AT APRAISAL TIME, SUCH AS TECHNICAL ASSISTANCE, ORGANIZATION IMPROVEMENT AND BETTER MANAGERIAL METHODS.

COPY OF YOUR DRAFT REPORT WITH INDICATION OF PROPOSED CHANGES AND THEIR REASONS BEING AIRMAILED. REGARDS. FERNANDO CALDAS - ASSESSOR DA SUP/IPLAN.

NNNNNNNNNNNNNN TRANS POR ILANIO

BEM REC/a?@

440093 WORLDBANK

6119791PCG BRGGGG

Mr. Mervyn L. Weiner, Director-General, DGO

September 19, 1979

Kenneth A. Bohr, Acting Director, OED

Project Performance Audit Report on China:
Third Power Project (Loan 749-CH)

I am attaching for your approval the Performance Audit Report on China: Third Power Project supported by Loan 749-CH. Comments received from Central Projects Staff, East Asia and Pacific Regional Office, the Government and the Borrower have been taken into account.

Attachment

cc: Messrs. Baum, CPSVP
Husain, AENVP

G.B.
EBowers:cmn

OFFICIAL FILE COPY

440098 WORLDBANK

611023SPPR BR (Telex no)

RECEIVED

hc

BRASILIA DF - BRASIL - IPEA TLX NR 3809/79 140979

1979 SEP 14 PM

COMMUNICATIONS DIVISION

MR SHIV KAPUR

WORLD BANK - 1818 H STREET, NW

WASHINGTON DC 20433 - USA

UAPI-121/79

REF LOANS 728 AND 887 OUR COMMENTS BEING SENT LATER TODAY. NOW PLEASE CONSIDER FOLLOWING GENERAL NOTES:

FIRST.

MAY I SUGGEST THAT EACH GOVERNMENT'S COMMENT BE INCORPORATED FINAL TEXT PPAR IN FOLLOWING MANNER:

AAA) WHEN YOUR ANALIST AGREES WITH SPIRIT OF OUR COMMENTS PLEASE INTRODUCE THEM WITHIN THE TEXT, SHAPING LANGUAGE AS REQUIRED.

BBB) WHEN NOT POSSIBLE TO REACH AGREEMENT PLEASE ADD FOOTNOTE STATING OUR OPINION.

CCC) PLEASE FEEL FREE TO DISCUSS ANY FURTHER CLARIFICATION BY TELEPHONE, OUR PHONE NUMBER (061) 226.9298.

SECOND.

WE FEEL THAT INCORPORATION COPY OF OUR TELEXES TO FINAL PPAR (AS YOU DID IN CASE OF FINAL LOANS 813 AND 854 PPAR) MAY LEAD TO MORE DIFFICULT EXAMINATION OF DOCUMENT, BECAUSE:

AAA) PAGES AND PARAGRAPHS MENTIONED OUR TELEXES ARE REFERED TO EXISTING NUMBERS OF DRAFT REPORT, AND NUMBERING OF FINAL VERSION USE TO BE DIFFERENT. THIS HAPPENDED IN CASE PPAR OF HIGHWAYS PROJECTS LOANS 813 AND 854 AND UNADVISED READER MAY NOT UNDERSTAND APPARENT INCONGRUENCIES.

BBB) ANYWAY CAREFULLY EXAMINATION OF FINAL REPORTS MADE IN SUCH WAY WILL REQUIRE SUCESSIVE BACK AND FORTH CONSULTATION TO DIFFERENT PARTS OF THE DOCUMENT WHICH MIGHT BE TROUBLESOME FOR READER.

THIRD.

DESPITE EFFORTS UNABLE TO RECEIVE ELETROBRAS'S COMMENTS WITHIN LAST ACCORDED SHEDULE. ADVISED THEY ARE REPLYING YOU DIRECTLY YOUR LETTER OF AUGUST ADDRESSED ELETROBRAS'S PRESIDENT. AWAITING COPY OF THEIR COMMENTS TO YOU, WHEN (IF REQUIRED) WE WILL TRANSMIT FURTHER COMMENTS, EVEN OUT OF ACCORDED SHEDULE.

REGARDS. FERNANDO CALDAS ASSESSOR DA SUP/IPLAN.

NNNNNN TRANS / ILANIO

BEM REC/??

440098 WORLDBANK

611023SPPR BR GGGG

440098 WORLDBANK

611023SPPR BR (Telex M=)

hc

RECEIVED

1979 SEP 14 PM 3:20

COMMUNICATIONS DIVISION

BRASILIA DF IPEA TLX NR 3810/79 140979

MR SHIV KAPUR

WORLD BANK - 1818 H STREET, NW

WASHINGTON DC 20433 - USA

UAPI-122/79 - RE: DRAFT PPAR LOAN 728.

YOUR DRAFT REVISED WITH CONCURRENCE OF ELETROSUL, DNAEE/MME AND SEPLAN/PR.

REGRET THAT, DESPITE EFFORTS, UNABLE TO RECEIVE ELETROBRAS'S COMMENTS WITHIN LAST ACCORDED SHEDULE. ADVISED THEY ARE REPLYING DIRECTLY YOUR LETTER OF AUGUST ADDRESSED ELETROBRAS/S PRESIDENT. EXPECTING COPY OF THEIR COMMENTS TO YOU, WHEN (IF REQUIRED) WE WILL TRANSMIT FURTHER COMMENTS, EVEN OUT OF A ACCORDED SHEDULE. CONSOLIDATION OF COMMENTS RECEIVED AND OURS LED US TO SUGGEST YOU FOLLOWING CHANGES, WHICH ARE REFERED TO PAGES AND PARA. NUMBERS OF YOUR DRAFT REPORT.

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COPY OF YOUR DRAFT REPORT WITH INDICATION OF PROPOSED CHANGES AND THEIR REASONS BEING AIRMAILED. REGARDS. FERNANDO CALDAS - ASSESSOR DA SUP/IPLAN.

NNNNNNNNNNNNNN TRANS POR ILANIO

BEM REC/?

440098 WORLDBANK

611979IPCG BRGGGG

FORM NO. 27 OCR (11/78)

WORLD BANK OUTGOING MESSAGE FORM (Telegram, Cable, Telex)

Class of Service: TELEX ONLY

Date: September 4, 1979

Telex No.: 11520

Originator's Ext.: 7-4478

Chow

START HERE TO: TAIPOWER

CITY/COUNTRY: TAIPEI, REPUBLIC OF CHINA

MESSAGE NO: FOR MR. DAVID S.L. CHU. THANK YOU FOR YOUR LETTER (REF.IBRD-5283) OF AUGUST 16 SENDING US YOUR COMMENTS REGARDING DRAFT PERFORMANCE AUDIT REPORT FOR THE THIRD POWER PROJECT (LOAN 749-CHA). WE WOULD APPRECIATE RECEIVING AT YOUR EARLY CONVENIENCE THE FOLLOWING ADDITIONAL INFORMATION.

AAA NAME OF CONSULTANTS, COST OF SERVICES, FINANCING SOURCES AND COMPLETION DATE FOR THE CONSULTANTS SERVICES WHO CARRIED OUT THE FINAL STAGE OF FINANCIAL SYSTEM PLANNING STUDY FOR WHICH THE BANK HAD INCLUDED US DOLLARS 400,000 IN THE LOAN.

BBB PROVIDE IN TABLE OF PAGE A7 (GENERATION COST PER KWH OF TALIN NO.5 VS SYSTEM AVERAGE) PRODUCTION (GWH) AND GENERATION COSTS FOR 1978 AND RECONFIRM FIGURES FOR 1976 AND 1977.

BEST REGARDS. KAPUR.

END OF TEXT

NOT TO BE TRANSMITTED

SUBJECT: Loan 749-CHA China

DRAFTED BY: JCavallotti:gd

CLEARANCES AND COPY DISTRIBUTION:

cc: Messrs. Kirmani, Howell, Loos, Files

AUTHORIZED BY (Name and Signature): Energy/Water

P.C. Kapur, Acting Div.Chief

East Asia & Pacific REgional Office

CHECKED FOR DISPATCH

440098 WORLBANK
440098 WORLBANK
11385 CEPDEY
(Telex NO.)

sd

Project File
Mr Pascua

I hope this is not yet out.

8/20

RECEIVED
1979 AUG 20 AM 8:22
COMMUNICATIONS DIVISION

Distribution:
Mr. S. Kapur

MR.SHIV S. KAPUR
OPERATIONS EVALUATION
THE WORLD BANK

0038 REUR LETTER JULY 11, 1979, SOME OF THE FIGURES IN THE AUDIT REPORT HAVE BEEN REVISED BY TAIPOWER AND THE REVISIONS WERE MAILED TO YOU ON AUGUST 16. PLEASE ALSO BE INFORMED APPROPRIATE ARRANGEMENTS HAVE BEEN MADE FOR TAIPOWER TO PROCEED IN THE FUTURE WITH NECESSARY LAND ACQUISITION BEFORE EACH PROJECT IS SPECIFICALLY APPROVED FOR IMPLEMENTATION.

COUNCIL FOR ECONOMIC PLANNING AND DEVELOPMENT

EXECUTIVE YUAN

TAIPEI

1075
8/20

440098 WORLBANK
11385 CEPDEY

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

Project File

Mr Pereira

You may wish to make necessary revisions while awaiting consulting comments.

TO: Mr. Shiv S. Kapur (OED)

DATE: August 14, 1979

FROM: R. H. Sheehan (EGY) RHS

SUBJECT: CHINA: Additional Comments on PPAR for Third Power Project

In addition to the points raised in my July 20, 1979 memo, Mr. Moore (returning from vacation) has the following comments, which have been discussed with Mr. Pereira:

8/16

1. Concerning the $400,000 of accounting, system planning and training services in the original project, the Audit Memorandum states (para. 2) "There is no evidence that these services were implemented or that the Bank pursued the matter after loan approval." However, the appraisal report (para 2.10) states "Gilbert Associates (USA) and Ebasco (USA) have been retained to provide financial and system planning consulting services, respectively". Mr. Ling (AEP) has confirmed that the work was completed. These services were probably financed from other sources, as was the load control part of the project, so no loan disbursements were made for them.

2. Footnotes are required to explain the contradiction between the Project Completion Date of December 31, 1977 (PCR para 5.05), having an "actual" project cost (PCR Annex 2), and the fact that one substation will not be completed until late 1979 (Audit Memorandum para. 2). For example, the cost question could be explained by- "all the equipment for the substation has been delivered and the expected installation costs have been included in the final project cost".

3. Since the production cost of the Talin 5 unit in the early years of its operation would be expected to be "less than" the system average, the second sentence in PCR para 3.19 should be changed slightly to "----- was only US¢1.74 per KWh, compared to (instead of "less than") the average production cost for the entire system of US¢2.15-----".

cc. Mr. Beach (AEP)
Mr. Pereira (OED)

EAMoore:sk

1063
8/16

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

Project File
Mr. Parsons
LS

TO: Mr. Shiv S. Kapur, Director, OED

DATE: ~~July~~ 20, 1979

FROM: R. H. Sheehan, Acting Director, EGY RHS

Please take care of the three points below. SS 7/23

SUBJECT: Project Performance Audit Report on China: Third Power Project (Loan 749-CH)

Our only comment pertains to Taipower's remarks concerning the Bank's procurement guidelines.

In the P.C.R. Paragraph 3.18 the statements concerning authority in taking final decisions and a different mechanism for exchange rate variations are too fuzzy. As far as I can see our borrowers do have full authority in making awards and the guidelines do protect the borrower rather than the supplier in the event of changes in exchange rates. Both of these statements should be clarified.

The final sentence of the P.C.R. should also be revised to reflect the above clarifications. We shouldn't be so dogmatic without clearly explaining what the complaint is.

Paragraph 4 of your audit memo should also give OED's judgement as to whether or not the procurement guidelines could be improved.

cc: Mr. Baum, CPSVP
Mr. Morse, PAS
Mr. Beach, AEP
Mr. Loos, AEA

RHSheehan:pjk

980
7/23

The World Bank / 1818 H Street, N.W., Washington, D.C. 20433, U.S.A. • Telephone: (202) 477-1234 • Cables: INTBAFRAD

July 11, 1979

Dr. David S.L. Chu
President
Taiwan Power Co. (Taipower)
39 East Hoping Road, Section 1
Taipai 106, Taiwan
Republic of China

Dear Dr. Chu:

Re: Project Performance Audit Report on: China - Third Power Project (Loan 749-CH)

The Operations Evaluation Department is an independently constituted unit within the World Bank Group. The functions of the Department include a review, shortly after completion of loan/credit disbursements, of the experience and results of all projects assisted by the Bank and the International Development Association. These performance audits are intended to evaluate the extent of achievement of project objectives, reasons for shortfalls or outstanding achievements, and the general effectiveness of the World Bank support for the lending operation. The audit focuses particularly on what the organization can learn from past experience.

I attach a copy of the first draft of the project performance audit report on China: Third Power Project, supported by Loan 749-CH of June 1971. I would appreciate receiving any comments that you may have on the draft by August 21, 1979, so that we can take them into consideration in formulating our final conclusions before distributing the report to the Bank's Executive Directors.

We consider your views and comments as of crucial importance to reaching balanced conclusions concerning this project experience. In addition to reflecting them in the conclusions of the performance audit, we also propose to fully reproduce your views and comments in the final report. Should you find the present draft of this project performance audit report satisfactory and have no comments to make, I shall be grateful if you can inform me accordingly, preferably by cable. A copy of this final report, as distributed to the Executive Directors, will be sent to you for your information.

I am also sending a copy of the present draft report to the Minister of Finance and the Chairman of the Council for Economic Cooperation and Development for their comments.

Sincerely,

Shiv S. Kapur
Acting Director-General
Operations Evaluation

Attachment

The World Bank / 1818 H Street, N.W., Washington, D.C. 20433, U.S.A. • Telephone: (202) 477-1234 • Cables: INTBAFRAD

July 11, 1979

His Excellency Walter Fei
Minister of Finance
Ministry of Finance
Taipai, Taiwan
Republic of China

Dear Mr. Minister:

Re: Project Performance Audit Report on: China - Third Power Project (Loan 749-CH)

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Sincerely,

Shiv S. Kapur
Acting Director-General
Operations Evaluation

Attachment

WORLD BANK / INTERNATIONAL FINANCE CORPORATION

OFFICE MEMORANDUM

Project File
Mr Bates

TO: Mr. Shiv S. Kapur, Director, OED

DATE: July 2, 1979

FROM: J. Beach, Acting Asst. Director, AEPDR

SUBJECT: Project Performance Report on China: Third Power Project (Loan 749-CH)

Please send to the country for comments. 7/2

With reference to your memorandum to Mr. Husain of June 28, 1979, I have to say that the East Asia and Pacific Regional Office has no comments to make on the draft PPAR in respect of the above project.

JBeach:csk

cc: Messrs. S.S. Husain
S.S. Kirmani
F.H. Howell (o/r)
J. Cavallotti

907
7/2

FORM NO. 75
(1-76)

THE WORLD BANK

ROUTING SLIP	DATE: June 27, 1979

NAME	ROOM NO.
Mr. Robin W. Bates	N-1118
Project Performance Audit Report	
China: Third Power Project	
(Loan 749-CH)	

Robin. Pl see Mr Cavallotti's Comments

	APPROPRIATE DISPOSITION		NOTE AND RETURN
	APPROVAL		NOTE AND SEND ON
	CLEARANCE		PER OUR CONVERSATION
	COMMENT		PER YOUR REQUEST
	FOR ACTION		PREPARE REPLY
	INFORMATION		RECOMMENDATION
	INITIAL		SIGNATURE
	NOTE AND FILE		URGENT

REMARKS:
Additions and changes to be introduced to the PCR

3.23 Gilbert Ass. and Ebasco were engaged to ripower for financial and system planning consulting services. The consultants assisted TPC in the preparation of the long term investment plan and the long range power development program. The services rendered by the consultants were considered satisfactory by TPC

See small changes in 6.01

Delete last part of para 9

FROM:	ROOM NO.:	EXTENSION:

June 26, 1979

Mr. Beach

I would appreciate it if you could take a quick look at the attached audit of China Third Power. The project seems to have been very straightforward and successful and therefore has been given the abbreviated treatment by OED. However, there are two points which, while relatively quite minor, bother me. They concern: (i) the component for certain consultants' services, which seems to have 'got lost' (para. 3); and (ii) the absence of supervision after 1973 (para. 8). Please let me know if you can cast light on these matters before the audit is formally sent to your Region (Friday, June 29).

There is also a proposal in para. 9 that something might be included in the Bank's Loan Agreements concerning site acquisition in projects. I am more interested in this as a general matter because it is frequently a problem in power transmission / distribution projects and in telecommunications. Has the proposal any merit?

RB
Robin W. Bates
OED
(Room N-1118 - Ext. 61760)

C32123/J33878/D944/A-21

CHINA

THIRD POWER PROJECT

LOAN 749-CH

PROJECT COMPLETION REPORT

January 16, 1979

1/19/79
(4 Copies

C32123/J35417/D944/A-22

CHINA

THIRD POWER PROJECT

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3. Actual Disbursements vs. Appraisal Estimate
4. Income Statements 1971-1976
5. Balance Sheets 1971-1976
6. Sources and Applications of Funds 1971-1976
7. Amendments to the Loan Agreement

Map

No. IBRD 3263R (PCR)

January 16, 1979

C32123/J35371/D944/A-1/

PROJECT COMPLETION BASIC DATA SHEET

CHINA - THIRD POWER PROJECT (LOAN 749-CH)

KEY PROJECT DATA

	Appraisal estimate	Actual
Total Project Cost (US$ million)	81.2	108.4
Overrun (%)		33.5
Loan Amount (US$ million)	55.0	55.0
Disbursed		55.0
Repaid to 12/31/78	4.65	
Outstanding to 12/31/78	50.35	
Date physical components completed	3/31/76	12/31/75 /1
Financial performance	-	sound
Institutional performance	-	satisfactory

/1 Generating Facilities (Talin No. 5). Transmission facilities in mid-1979.

OTHER PROJECT DATA

		Actual
First mention in files		6/70
Government's application		7/70
Negotiations		3/71
Board approval		4/21/71
Loan agreement date		6/11/71
Effectiveness date		9/9/71
Closing date	12/31/76	12/31/77
Borrower	Taipower (TPC)	Taipower (TPC)
Fiscal year of borrower	January-December	July-June

	Month/year	No. of weeks	No. of persons	Man-weeks	Date of report
Appraisal	10/70		3		April 12, 1971
Supervision I	4/72	0.5	1	0.5	April 13, 1972
Supervision II	11/72	0.8	1	0.8	December 15, 1972
Supervision III	6/73	1.8	1	1.8	October 5, 1973

COUNTRY EXCHANGE RATE

Name of Currency:	New Taiwan Dollar (NT$)	
Year:		
Appraisal year average (1971)	Exchange rate:	US$ = NT$ 40.10
Completion year average (1977)		US$ = NT$ 38.10
Project weighted average		US$ = NT$ 39.18
Present exchange rate (1978)		US$ = NT$ 36.50

CHINA

THIRD POWER PROJECT - LOAN 749-CHA

PROJECT COMPLETION REPORT

I. INTRODUCTION

1.01 The Bank has contributed to the development of China's electric power sector by granting three loans totaling US$149.5 million, for partial financing of the expansion of the generation and transmission facilities of the Taiwan Power Company (Taipower). The first loan, totaling the equivalent of US$50 million, was granted in 1968 to help with the construction of the Tachien hydroelecric project (3 x 78 MW) and related substations. The second, in 1970, for the equivalent of US$44.5 million, was used for the construction of a fourth thermoelectric steam unit (375 MW) at the Talin plant, for the final expansion of the Chingshan hydroelectric plant (Lower Tachien), comprising installation of the two remaining 90-MW units, and for the related transmission system. The third and last loan granted in 1971, equivalent to US$55 million, helped to finance, inter alia, the expansion of the Talin plant, comprising installation of the fifth unit (500 MW). The generating unit was at that time the biggest ever financed by the Bank.

1.02 The possibility of participation by the Bank in the third loan was discussed initially during the visit by the President of the Bank to China in June 1970. Taipower submitted a formal loan application to the Bank in July 1970, requesting US$70 million for the construction of Talin No. 5, extension of the transmission system, and purchase of the equipment still needed for Units 1 and 2 of the Chinshan nuclear plant. At the meeting held at the Bank with the President of Taipower in August 1970, it was agreed in principle that any financing of the proposed project would not exceed US$57 million, including interest during construction and excluding, at Taipower's request, miscellaneous items of equipment for the nuclear plant.

1.03 Taipower felt that the greatest priority should be assigned to installation of the 5th unit in Talin, to keep a reasonable level of reserves within the system as well as meet the demand in the event of any delay in the construction schedule for the nuclear plant. In October 1970, the Bank sent an appraisal mission composed of D. King, P. Cornford and B. Montfort /1. The US$55 million loan was approved on April 27, 1971 and the agreement signed on June 11 of that year.

II. DESCRIPTION OF THE PROJECT

2.01 The project represented about 7% of the cost of Taipower's expansion program over the period 1971-1976, and consisted of:

(a) expansion of the Talin thermoelectric plant (installation of a fifth 500-MW unit);

/1 The project was considered by the mission as the most appropriate and economic means of meeting the increase in load. The arrangements planned for engineering and construction were also considered satisfactory.

(b) construction of the Nankang and Sungshu substations, and expansion of the Panchiao substation;

(c) control and load dispatch system; and

(d) consulting services.

2.02 The principal changes made to the project during implementation were:

(a) addition of a new fuel storage facility for the power plant;

(b) relocation of the NanKang substation site to Hsitze and of the Sungshu site to Lung-Tan; and

(c) inclusion of consulting services for the Mingtan pumped storage project.

2.03 The Bank loan was to finance the entire foreign exchange component of the equipment and services, and the interest and other charges on the loan during construction. Because of the higher costs arising during execution of the works, the Bank accepted TPC's proposal, formulated in February 1975, that the company purchase the load dispatch equipment out of its own funds and use the loan funds to cover the higher costs of the substation equipment and the interest and other charges on the loan.

III. PROJECT IMPLEMENTATION

Award of Principal Contracts

3.01 A total of 14 manufacturers of turbo-generating equipment were invited to submit tenders in November 1970. The closing date for tenders was postponed from February 1971 to April 2 of that year. The only companies to submit bids were Mitsubishi of Japan and Kraftwerk-Union of Germany. The contract was awarded to Mitsubishi in May 1971.

3.02 Out of 20 manufacturers of steam generators invited to participate in the bidding in June 1971, only four submitted bids: Babcock Atlantique of France, Babcock and Wilcox Co. of the US, Combustion Engineering Inc. of the US, and Mitsubishi of Japan. The CIF prices ranged between US$11.5 million and US$20 million. The contract was awarded to Mitsubishi in November 1971.

3.03 The contracts for the remaining equipment for the thermoelectric unit and the substation equipment were awarded between 1972 and 1974. Annex 1 contains a breakdown of suppliers for the main project components.

3.04 Despite some delay in the award of certain contracts for the supply of equipment for the power plant and the EHV substations, resulting from complaints by some of the bidders (480-V switchboards and 345-KV air blast circuit breakers) who felt that their bids were the lowest (their bids having been rejected because they did not conform to the bid documents), there were no adverse 3ffects on the implementation schedule.

Implementation Schedule

Talin No. 5

3.05 Taipower (TPC) retained the services of the American consulting firm of Gibbs and Hill for preparation of the project for expansion of the thermoelectric plant. This firm was providing the consulting services for construction of Talin No. 4 (Loan 671-CHA). The civil engineering works were executed by local contractors, and the electrical and mechanical equipment was installed by TPC's own personnel. Project construction started in August 1972, and the thermoelectric unit was first connected to the electric power network in May 1975, more than 4 months ahead of schedule.

3.06 During the test period a failure of boiler screen tubes was caused by resonance. The tube supports were redesigned and the damaged tubes were replaced. In addition, the generator rotor leads were modified as indicated by the manufacturer. The unit was started again at the beginning of August 1975, and reached full load operation by the end of that month. Despite these holdups, Talin No. 5 entered into commercial service about two months ahead of schedule.

Substations

3.07 The project included construction of two EHV substations in NanKang and Sungshu and the expansion of Panchiao, with the following installations:

Substation	Power Transformers	Terminal Equipment
NanKang	1 x 500 MVA	2 sets
Sunngshu		6 sets
Panchiao		2 sets

The NanKang and Sungshu substations were finally located in Hsitze and Lung-Tan respectively due to the inability of Taipower to acquire the land in the sites originally selected.

3.08 The design of the substations was the responsibility of the American consulting firm of Commonwealth Associates, Inc., which was also providing services for the transmission projects included in the Bank's two former loans. The substations were installed by TPC's own personnel, while the civil engineering works were performed by local contractors. Work started at the end of 1973; expansion of the Panchiao substation was completed in August 1976, and the Hsitze substation was completed in March 1977, more than a year behind schedule, this being the result of delays in purchase of the land for the substation, which was not finalized until the beginning of 1975.

3.09 The original selection of the site for the Sungshu substation had subsequently to be changed because the land selected was located in the restricted area of a military air base. In 1976 a new site was proposed, (Kuan-shi), and this was later changed to Lung-Tan, which was considered more suitable. The land for the substation was finally purchased during the first quarter of 1978, and the facility is now scheduled for completion in the second half of 1979.

Studies

3.10 The MING consortium (a joint venture of Lahmeyer International, Chas T. Main International and Motor Columbus), in association with the local firm of Sinotech Engineering Consultants (SEC), were the consultants for execution of Stage II of the Mintang Pumped Storage Project, comprising preparation of the basic design and bid documents. In November 1975, the Bank authorized TPC to use the the surplus funds in Categories I and II to finance part of the cost of these studies, which was not included in the loan. The consultants started work in December 1976 and finished in August 1978, one month behind schedule. The final cost of the study was US$1.8 million and NT$30 million, of which the Bank financed US$0.51 million.

3.11 The American consulting firm, Computer Sciences Corporation (CSC), was responsible for preparation of the design and specifications, bid evaluations and assistance during factory tests of the dispatch and control project. The system adopted - a computer-based real-time on-Line Dispatch and Control System (OLDCS) - was selected as being the most suitable for miminizing system operation cost and improving quality and reliability of the power supply. The total cost of the consulting services, financed by the Bank, was US$401,373.

3.12 The equipment required for the control and load dispatch center was financed by TPC out of its own funds (paragraph 2.03). Leeds and Northrup Co. was the contractor for execution of the first stage of the OLDCS (US$5.6 million) with the exception of the Uninterruptible Power Supply Subsystem (UPS), which was awarded to Emerson Electric Co. (US$0.15 million). The scope of the project was expanded to include the control of 12 power plants instead of the nine originally planned, and also to include the control of 19 primary substations not originally covered. The final stage of the works is scheduled for completion by mid-1979.

Project Cost

3.13 The final project cost, including the equipment for the load dispatch and consultants' services for the pumping project is US$108.4 million, about 33.5% higher than the appraisal estimate of US$81.2 million. Excluding the cost of services for the Mintang pumped storage project, the final project cost would amount to US$105 million, 29% higher than the appraisal estimate. The comparison of appraisal estimate and actual costs are detailed in Annex 2 and summarized below:

	US$ million					
	Appraisal Estimate			Actual Cost		
	Local	Foreign	Total	Local	Foreign	Total
Talin No. 5	21.2	40.0	61.2	22.9	52.1	75.0
EHV substations	4.4	5.4	9.8	11.2	5.7	16.9
Load control	0.6	1.6	2.2	1.2	5.7	6.9
Interest during construction	-	8.0	8.0	-	9.6	9.6
Total	26.2	55.0	81.2	35.3	73.1	108.4

3.14 The cost overruns resulted from:

(a) the revaluation of the yen and of the currencies of different European countries where the equipment was purchased;

(b) increases in ocean freight and consultancy services;

(c) increases in civil works and land costs; and

(d) as a result of local inflation. The general indices of wholesale prices in Taiwan increased from 100 in 1971 to 180.4 in 1974.

Disbursements

3.15 The loan was fully disbursed by January 16, 1978, 13 months behind schedule. The closing date was extended by one year to December 31, 1977 (para. 5.05) to enable TPC to complete the withdrawal of funds from the loan. A comparison of estimated and actual disbursements is shown in Annex 3.

3.16 TPC requested an amendment to Schedule 1, Allocation of Proceeds of Loan, four times during execution of the project. The principal amendment consisted of eliminating financing of the load dispatch equipment to allow for redistribution of the available funds among the other loan categories, as shown below:

ALLOCATION OF PROCEEDS OF LOAN

	Category	in US$ Original	Actual
I.	Talin No. 5 thermal generating unit and associated equipment and facilities	33,900,000	35,874,426.73
II.	Substation facilities	5,100,000	5,649,096.43
III.	Equipment for load dispatch and control	1,600,000	-
IV.	Consultants' services	2,800,000	3,875,720.30
V.	Interest and other charges on the loan accrued on or before 4/14/76	8,000,000	9,600,756.54
VI.	Unallocated	3,600,000	-
	Total	55,000,000	55,000,000.00

Procurement

3.17 Preparation of bid documents and procurement of the equipment and materials were in accordance with the Bank's guidelines. TPC appreciated the excellent assistance provided by the Bank in the review and approval of the contracts and purchase orders, which was one of the most important factors contributing to the prompt execution of Talin No. 5.

3.18 With respect to the Bank's guidelines for procurement and other procurement procedures , TPC commented that:

(a) the US$100,000 limit up to which contracts may be awarded without the need to first send documentation to the Bank for approval should be substantially increased;

(b) the borrower should be allowed greater authority in taking a final decision on award of the contracts; and

(c) a different award mechanism should be set up to ensure that exchange rate variations had the least impact in awarding contracts.

Performance of Equipment

3.19 From the date on which it entered into commercial operation, Talin No. 5 has performed highly satisfactorily, with utilization factors of 78.4% in 1976 and 89% in 1977. The average production cost of the plant for those two years was only US¢1.74 per kWh, less than the average production cost for the entire system of US¢ 2.15, as shown below:

GENERATION COST PER kWh OF TALIN NO. 5 vs. SYSTEM AVERAGE

Year	Talin No. 5 Production (GWh)	System Production (GWh)	Generation Cost (US mill/KWh) Talin	System
1976	3,311	26,877	17.16	20.52
1977	3,760	29,724	17.64	22.36
Weighted average cost			17.45	21.49

Performance of Contractors and Consultants

Contractors

3.20 In TPC's opinion, the equipment suppliers for Talin No. 5 complied satisfactorily with their contractual obligations, with regard both to delivery dates and to any changes for adjustments of defective items.

3.21 The suppliers of equipment and apparatus for the substations met their delivery dates except for a few contractors who delayed their final consignments some six months beyond the promised dates. These delays had absolutely no effect on execution of the works, because of the delay in purchasing the land for the substations.

Consultants

3.22 Gibbs and Hill were the consultants responsible for preparation of the Talin No. 5 design, bid evaluation, and to act as TPC's procurement agent for imported equipment and materials. In the opinion of TPC, the consultants rendered excellent service.

3.23 Commonwealth Associates, Inc. (CAI) provided consulting services for the substations, which comprised a review of the drawings and technical specifications prepared by TPC, bid evaluation and supervision of purchases of imported equipment, inspection of the equipment in factory, and on-site supervision of the tests. The services provided by the consultants were considered satisfactory by TPC.

IV. PROJECT JUSTIFICATION

4.01 Despite the 1973 crisis, which affected Taiwan by trebling the price of oil and sharply reducing both exports and GDP, with the resultant economic recession in 1974 and 1975, energy sales over the period 1971-1976 were higher by 6.6% than the appraisal estimates as is shown below:

COMPARISON OF ENERGY SALES (Gwh)

	Appraisal			Actual		
	Lighting	Power	Total	Lighting	Power	Total
1971	3,091	9,796	12,887	3,148	10,688	13,836
1972	3,598	11,015	14,613	3,566	12,515	16,081
1973	4,127	12,269	16,396	4,084	13,854	17,938
1974	4,727	13,649	18,376	4,350	14,531	18,881
1975	5,390	15,146	20,536	5,122	16,095	21,217
1976	6,136	16,819	22,955	5,981	18,763	24,744
Total (GWh)			105,763			112,697
Average rate of growth (%)			11.7			12.9

4.02 Due to the resurgence of industrial and economic activity in general, demand over the long-term is now projected at 11.7% a year between 1978 and 1983 and 12.9% a year between 1984 and 1989. This leads one to assume that the present demand of 5,571 MW will almost double by 1984 (10,972 MW) and reach about 17,500 MW in 1988.

4.03 The Talin No. 5 project is fully justified, having met 12.5% of the system's energy requirements since its entry into operation, thereby avoiding any restrictions on service that would otherwise have arisen because of the delays in construction of the Chinsan No. 1 nuclear plant. Since current estimates of future energy demand are higher than those forecasted some years ago, Talin No. 5 would displace part of the electric power generated by other less efficient thermoelectric units,thereby bringing down the system's overall production costs.

4.04 The internal rate of return on Talin No. 5 has not been compared with the appraisal estimate because of insufficient data in that report. However, it may be assumed that the internal rate of return on the project will be higher than the opportunity cost of capital in Taiwan (10%) if we take account of the fact that, despite the steep increase in fuel prices and the increase in the project cost (17%), the selling price of energy to the final consumer has also more than doubled in current prices over that charged at the time the appraisal was made.

4.05 The greatest benefits deriving from the improved quality and continuity of the service, and from the increased reliability of operation of the electrical system as a whole, will be obtained in full upon completion of the load dispatch facilities and the Lung-Tan substation, scheduled for the second half of 1979.

V. OPERATING RESULTS AND FINANCIAL PERFORMANCE

5.01 TPC is a well organized and efficiently managed enterprise. It has highly qualified staff at all levels, and can satisfactorily install complicated electro-mechanical facilities using its own personnel. The ratio of personnel to installed generating capacity or to energy sales is the lowest of all similar companies in the region receiving assistance from the Bank. The following table contains a few of TPC's operating figures for the period 1971-1977:

OPERATING STATISTICS

	1971	1972	1973	1974	1975	1976	1977
Installed capacity (MW)	2,774	3,519	4,124	4,358	5,300	5,864	7,020
Hydro	901	901	1,131	1,365	1,365	1,365	1,365
Thermal	1,873	2,618	2,993	2,993	3,935	4,519	5,019
Nuclear	-	-	-	-	-	-	636
Peak load (MW)	2,399	2,734	3,134	3,452	3,765	4,302	4,818
Energy output (Gwh)	15,171	17,449	19,805	20,534	22,894	26,877	29,724
Hydro	2,870	3,415	3,207	4,190	4,642	3,779	3,496
Thermal	12,094	13,824	16,425	15,849	17,659	22,617	25,634
Purchased	207	210	173	495	593	481	503
Nuclear	-	-	-	-	-	-	91
Sales (Gwh)	13,836	16,081	17,938	18,881	21,217	24,744	27,607
Power	10,688	12,515	13,854	14,531	16,095	18,763	20,855
Lighting	3,148	3,566	4,084	4,350	5,122	5,981	6,752
Residential	2,736	3,085	3,514	3,756	4,383	5,073	5,680
Commercial	412	481	570	594	739	908	1,072
Consumers (1'000)	2,410	2,560	2,729	2,938	3,140	3,331	3,557
Employees	11,919	12,623	12,956	13,241	13,970	14,407	14,894
KW/employee	233	279	318	329	379	407	471
Consumers/employee	202	203	211	222	225	231	239
Average tariff (NT$/Kwh)	0.57	0.56	0.58	1.03	1.07	1.06	1.28
Cost per Kwh sold (NT$)	0.44	0.43	0.46	0.84	0.90	0.96	1.04

5.02 The financial situation of TPC during project execution has, in general, been satisfactory. Energy sales during the period 1971-1976 increased at an average rate of 13% per year and revenues from energy sales rose by 26%, thanks to rates increases of almost 100% in 1974 and 20% in 1976. Operating costs increased by an average of 31% per year, due principally to the tremendous increase in fuel prices since 1973.

5.03 Average rate of return over the period 1971-1976 was 11.8%, higher than the covenanted 10% on the net fixed assets in operation, plus an adequate reserve for working capital (2.5% of such average of value of the net fixed assets and 11.5% of TPC's cash operating expenses). The internal cash generation provided slightly over 20% of construction investments, which is considered reasonable.

5.04 In 1972 TPC changed its fiscal year from the calendar year to July 1 - June 30 in order to conform with Government practice and issued a 6 monthly financial statement for the period January 1 - June 30, 1972. TPC's financial statements at December 31 over the period 1971-1976, compared with those estimated at th time of the appraisal, are shown in Annexes 4, 5 and 6. The key indicators for 1971-1977 are summarized below:

KEY INDICATORS

	1971	1972	1973	1974	1975	1976	1977
Revenue per Kwh sold NT$ (1)	0.57	0.57	0.58	0.58	0.58	0.58	-
Revenue per Kwh sold NT$ (2)	0.57	0.56	0.58	1.03	1.07	1.06	1.28
Operating ratio % (1)	65.2	64.0	63.0	62.7	62.5	60.6	-
Operating ratio % (2)	45.6	45.2	48.1	56.4	57.2	63.9	58.7
Rate of return % (1)	10.9	11.5	11.8	11.5	11.3	11.8	-
Rate of return % (2)	11.1	11.7	11.1	15.2	13.3	8.5	11.0
Debt service coverage (1)	1.8	1.8	1.6	1.6	1.6	1.7	-
Debt service coverage (2)	2.0	1.9	1.8	2.0	1.6	1.0	1.4
Debt/equity ratio (%) (1)	54	57	58	56	54	52	-
Debt/equity ratio (%) (2)	49	54	58	63	60	52	48
Contribution to construction % (1)	25	29	33	42	52	50	-
Contribution to construction % (2)	29	22	24	21	21	15	33.1

(1) Appraisal estimate.

(2) Actual.

Covenants

5.05 During project implementation, the Bank agreed with TPC to amend sections 2.04 and 5.06 and Schedule 2 of the Loan Agreement. Section 2.04 included the new closing date of the loan (December 31, 1977 instead of December 31, 1976). A new Part C was added to Schedule 2, including consulting services for the pumping project, and the final sentence of the Schedule was amended to include the new project completion date (December 31, 1977 instead of December 31, 1976).

5.06 In June 1977, TPC requested the Bank to amend Section 5.05 of the Loan Agreement (Debt Service Coverage) since expenditure on the expansion program over the next 10 years would amount to more than US$12 billion, of which over US$7 billion would have to come from loans. TPC felt that to keep the clause as agreed would oblige it to seek specific approval for each commitment, creating an unnecessary administrative burden both for itself and for the Bank, besides limiting TPC's capacity to manage its own debt.

5.07 In March 1978, the Bank agreed to amend Section 5.05, which in turn gave rise to a new Section 5.06, allowing TPC greater room for maneuver in managing its loan comitments. Annex 7 includes the amendments to the Loan Agreement.

VI. CONCLUSIONS

6.01 Thanks to the Bank's support in assisting TPC with execution of the project, TPC has been able to acquire in time the new generating capacity that was urgently needed to meet the incremental power requirements in the system at minimum cost. However, the objectives of the loan have not been fully achieved because of delays in the purchase of some of the sites for the EHV substations that are designed to improve the reliability of the service. To avoid such a situation in the future, TPC should acquire all sites on which the electrical facilities would be built before solicitation of bids.

6.02 TPC's suggestions concerning the Bank's procurement guidelines reflect the concern of many of the Bank's borrowers who feel that these guidelines restrict their decision-making process. The Bank is now more flexible in establishing the ceiling (para. 3.18) (a) on contracts awarded by the borrower. With respect to TPC's other two suggestions on this same subject (para. 3.18 (b) and (c), the experience gained by the Bank from handling a voluminous loan portfolio in a wide variety of sectors, and from its close relations with its borrowers, shows that maintenance of existing procedures in terms of procurement is of fundamental importance if the borrowers and member countries are to continue to benefit from the constant, objective and unbiased assistance the Bank provides.

C32123/J35417/D944/A-20

ANNEX 1

CHINA

THIRD POWER PROJECT

Data of Major Contracts

Description	Contractor or Supplier	Award Date	Final Contract Value: Original currency	Final Contract Value: US$ equivalent
_LIN NO. 5				
IBRD Fund				
Steam Power Plant				
Turbine Generator	Mitsubishi	08/19/71	¥ 3,593,294,230	12,567,264
Steam Generator	Mitsubishi	12/13/71	¥ 4,023,583,096	14,396,552
Circulating water pumps	Ingersoll-Rand	05/09/72	US$ 768,277	768,277
Condenser tubes	Mitsubishi	12/28/72	¥ 155,109,897	583,447
Power piping	Tubeco Inc.	03/27/73	US$ 4,027,430	4,027,430
Misc. heat exchangers	Manning & Lewis Co.	08/30/72	US$ 505,580	505,580
Air compressors & driving motors	Joy Manufacturing Co.	01/22/73	US$ 253,860	253,860
4160V Metal clad switchgear	Mitsubishi	12/06/72	¥ 75,387,500	270,267
480V Power centers	ITE	12/06/72	US$ 93,479	93,497
480V Motor Control Centers	Allis-Chalmers Co.	11/13/72	US$ 58,961	58,961
Traveling water screens	Rex Chain belt Inc.	11/09/72	US$ 116,872	116,872
Main transformer	General Electric Co.	06/06/72	US$ 729,410	789,410
Substations				
10 345/161/33 kV, 167/167/ MVA Autotransformer	Mitsubishi	06/22/73	¥ 283,020,000	1,088,212
345 kV Circuit Breakers	Brown Boveri Co.	12/05/73	SFr 6,284,000	2,334,522
161 kV circuit Breakers	Brown Boveri Co.	10/26/73	SFr 1,214,030	478,309
34.5 kV circuit Breakers	Westinghouse	08/16/73	US$ 13,464	13,464
345 kV Disconnecting Switch	Brauner Exp.	10/09/73	US$ 372,341	372,341
161 kV Disconnecting Switch	Okura	08/23/73	¥ 30,880,000	102,217
Protective Relays	General Electric Co.	05/23/74	US$ 793,068	793,068
345 kV & 161 kV Coupling Capacitor	ASEA	02/13/74	Sw Kr. 1,525,580	332,358
Lighting Arrester	ASEA	11/28/73	Sw Kr. 483,480	113,599
TPC Fund				
Boiler feedwater pumps	Byron Jackson	06/23/73	US$ 521,386	521,386
Computer	Fischer & Porter	03/30/73	US$ 363,142	363,142
Instrument, control & panel	Foxboro	04/10/73	US$ 362,849	362,849
Water treatment equipment	Crane	06/16/72	US$ 797,544	797,544
Contract values	Fischer	05/04/73	US$ 138,249	138,249
Steel plate for misc. tanks	Smith Steel	11/05/73	US$ 128,042	128,042

CHINA

THIRD POWER PROJECT

Comparison of Appraisal Estimate and Actual Costs

	Appraisal estimate			Actual cost			Appraisal estimate			Actual cost		
	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total	Local	Foreign	Total
	NT$ million						US$ million					
Talin No. 5												
Civil works	301.0	-	301.0	97.0	114.2	211.2	7.5	-	7.5	2.5	2.9	5.4
Construction equipment	216.0	12.0	228.0	73.0	1.3	74.3	5.4	0.3	5.7	1.9	0.1	2.0
Turbine & auxiliaries	-	469.0	469.0	215.6	477.2	692.8	-	11.7	11.7	5.5	11.6	17.1
Boiler & auxiliaries	-	518.0	518.0	315.8	700.7	1,016.5	-	12.9	12.9	8.0	18.1	26.1
Miscellaneous equipment	-	320.0	320.0	152.5	533.0	685.5	-	8.0	8.0	3.9	13.8	17.7
Spare parts	-	40.0	40.0	-	8.1	8.1	-	1.0	1.0	-	0.2	0.2
Engineering services	-	96.0	96.0	12.8	102.1	114.9	-	2.4	2.4	0.3	2.7	3.0
Consulting services	-	16.0	16.0	30.8	98.2	129.0	-	0.4	0.4	0.8	2.5	3.3/a
Price increase	-	133.0	133.0	-	-	-	-	3.3	3.3	-	-	-
Physical increase	36.0	-	36.0	-	7.7	7.7	0.9	-	0.9	-	0.2	0.2
Subtotal	553.0	1,604.0	2,157.0	897.5	2,042.5	2,940.0	13.8	40.0	53.8	22.9	52.1	75.0
Custom duties	297.0	-	297.0	/b	-	-	7.4	-	7.4	/b	-	-
Total	850.0	1,604.0	2,454.0	897.5	2,042.5	2,940.0	21.2	40.0	61.2	22.9	52.1	75.0
EHV Substations												
Load control	24.0	64.0	88.0	45.0	217.1	262.1	0.6	1.6	2.2	1.2	5.7/c	6.9
Civil works	-	-	-	284.9	-	284.9	-	-	-	7.5	-	7.5
Transformers	12.0	40.0	52.0	12.0	35.8	47.8	0.3	1.0	1.3	0.3	0.9	1.2
Other equipment	96.0	165.0	261.0	53.0	179.2	232.2	2.4	4.1	6.5	1.4	4.7	6.1
Contingencies	12.0	12.0	24.0	10.0	5.0	15.0	0.3	0.3	0.6	0.3	0.1	0.4
Subtotal	144.0	281.0	425.0	404.9	437.1	842.0	3.6	7.0	10.6	10.7	11.4	22.1
Custom duties	56.0	-	56.0	66.0	-	66.0	1.4	-	1.4	1.7	-	1.7
Total	200.0	281.0	481.0	470.9	437.1	908.0	5.0	7.0	12.0	12.4	11.4	23.8
Project Cost	1,050.0	1,885.0	2,935.0	1,368.4	2,479.6	3,848.0	26.2	47.0	73.2	35.3	63.5	98.8
Interest during construction	-	320.0	320.0	-	376.2	376.2	-	8.0	8.0	-	9.6	9.6
GRAND TOTAL	1,050.0	2,205.0	3,255.0	1,368.4	2,855.8	4,224.2	26.2	55.0	81.2	35.3	73.1	108.4/d

/a It is included the consultants services for the Mingtan pumped storage project for US$2.6 million, which it was not included originally in the project.

/b Custom duties are included with the cost of equipment.

/c The foreign exchange component of the Load Dispatch and Control project is estimated at US$5.7 million.

/d The total project cost excluding /c would be US$105.1 million or 30% higher than the appraisal estimate of US$81.2 million.

ANNEX 3

CHINA

THIRD POWER PROJECT

Actual Disbursements vs. Appraisal Estimate
(US$ million)

Year	Appraisal estimate 1st qtr.	2nd qtr.	3rd qtr.	4th qtr.	Total	Actual total
1971	-	-	-	3.0	3.0	1.5
1972	2.5	2.5	2.5	2.5	10.0	7.7
1973	3.0	5.0	5.0	6.5	19.5	20.7
1974	4.0	4.5	4.0	3.5	16.0	11.1
1975	1.0	2.0	1.0	1.5	5.5	8.9
1976	1.0	-	-	-	1.0	3.0
1977	-	-	-	-	-	2.0
1978	-	-	-	-	-	0.05
Total					55.0	55.0

C32123/J33878/D944/A-14/15 Dec. 16, 1978

CHINA

THIRD POWER PROJECT

TAIWAN POWER COMPANY

Income Statements, 1971-76
(NT$ million)

Year ending December 31, /a	1971		1972		1973		1974		1975		1976	
	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual	Estimated	Actual
Sales of energy, GWh	12,887	13,836	14,613	16,081	16,396	17,938	18,376	18,881	20,536	21,217	22,925	24,744
Average revenue per kWh, NT$	0.57	0.57	0.57	0.56	0.58	0.58	0.58	1.03/b	0.58	1.07	0.58	1.06
Operating Revenues												
Sales of electricity	7,344	7,850	8,370	9,065	9,431	10,329	10,618	19,474	11,918	22,685	13,378	26.137
Other (net)	271	370	304	380	341	443	383	804	427	1,133	475	1,355
Total	7,615	8,220	8,674	9,445	9,772	10,772	11,001	20,278	12,345	23,818	13,853	27,492
Operating Expenses												
Salaries, wages and social benefits	648	621	683	682	721	889	764	1,203	808	1,613	848	1,761
Fuel	2,015	2,510	2,227	2,959	2,442	3,533	2,720	9,262/c	3,066	10,784	3,034	14,263
Maintenance	338	269	383	300	435	358	506	447	581	559	661	753
Other operating expenses	321	349	341	330	362	403	419	525	486	670	543	789
Taxes other than income tax	195	183	223	194	250	275	288	324	320	425	363	482
Income tax	373	450	463	447	531	421	567	660	656	1,122	722	900
Depreciation	1,075	1,153	1,232	1,357	1,414	1,783	1,633	2,683	1,803	2,935	2,222	3,406
Total	4,965	5,535	5,552	6,269	6,155	7,662	6,897	15,104	7,720	18,108	8,393	22,356
Operating Income	2,650	2,685	3,122	3,176	3,617	3,110	4,104	5,174	4,625	5,710	5,460	5,136
Other	-	(157)	-	(229)	-	(54)	-	(307)	-	(116)	-	(103)
Total	2,650	2,528	3,122	2,947	3,617	3,056	4,104	4,867	4,625	5,594	5,460	5,033
Interest Charges												
Interest on long-term debt	1,140	816	1,386	1,169	1,810	1,540	1,967	2,212	2,071	2,847	2,261	3,882
Interest on short-term debt	-	6	-	12	-	31	-	150	-			153
Interest charged to construction	(407)	(114)	(647)	(313)	(923)	(687)	(782)	(1,302)	(825)	(1,437)	(515)	(2,181)
Interest on capital collected in advance	-	90	-	1	-	8	-	59	-	221	-	157
Total	733	796	739	863	887	873	1,185	1,000	1,246	1,781	1,746	2,011
Net Income	1,917	1,732	2,383	2,084	2,730	2,183	2,919	3,867	3,379	3,813	3,714	3,022
Rate base	24,318	22,769	27,163	25,161	30,635	27,634	35,726	32,063	41,058	41,931	46,404	59,165
Rate of return, %	10.9	11.1	11.5	11.7	11.8	11.1	11.5	15.2	11.3	13.3	11.8	8.5

/a The actual income statements are referred to December 31 although the Taipower fiscal year has changed as follows: Years 1968-71: January 1 - December 31; 1972: January 1 - June 30 (6 months); 1973-76: July 1 - June 30.
/b Electric rates were increased by 80% on average in January 1974 and by 20% in December 1976.
/c Petroleum price was incremented in 1974 by 208% over 1973.

ANNEX 4

CHINA

THIRD POWER PROJECT

Balance Sheets, 1971-76
(NT$ million)

Year Ending December 31	1971 Estimated	1971 Actual	1972 Estimated	1972 Actual	1973 Estimated	1973 Actual	1974 Estimated	1974 Actual	1975 Estimated	1975 Actual	1976 Estimated	1976 Actual
Assets												
Fixed Assets in Operation	34,257	32,964	38,870	36,412	43,420	40,491	51,506	47,656	56,796	69,831	65,494	99,931
Depreciation	(7,928)	(8,100)	(8,786)	(9,025)	(9,763)	(10,243)	(10,894)	(11,565)	(12,101)	(18,427)	(13,648)	(28,434)
Contribution in aid construction	(2,036)	(1,969)	(2,345)	(2,290)	(2,684)	(2,742)	(3,056)	(3,820)	(3,465)	(5,262)	(3,916)	(6,447)
Net Fixed Assets in Operation	24,293	22,895	27,739	25,097	30,973	27,506	37,556	32,271	41,230	46,142	47,930	65,050
Work in Progress	9,870	7,517	14,301	14,436	17,699	21,220	15,558	37,687	16,065	49,216	14,299	54,783
Other assets	174	213	174	183	174	167	174	181	174	542	174	675
Current Assets												
Cash	248	183	311	520	380	498	453	482	524	875	604	945
Accounts receivable (net)	367	400	419	442	472	483	531	815	596	822	669	860
Fuel	278	307	291	310	304	317	320	903	341	1,106	339	1,388
Materials & operating supplies	710	643	780	733	897	903	998	1,584	1,129	1,679	1,250	1,750
Prepayments	379	481	379	343	379	654	379	614	379	442	379	621
Other	23	13	23	29	23	5	23	5	23	7	23	7
Total Current Assets	2,005	2,027	2,212	2,377	2,455	2,860	2,704	4,403	2,992	4,931	3,264	5,571
Deferred Debits												
Nuclear fuel no. 1	-	-	-	-	626	-	944	-	997	-	933	-
Nuclear fuel no. 2	-	-	-	-	-	-	626	-	944	-	971	-
Other	14	89	10	44	10	34	10	70	10	91	10	59
Total Assets	36,356	32,741	44,436	42,137	51,937	51,787	57,572	74,612	62,412	100,922	67,581	126,138
Liabilities												
Capital and Reserves												
Capital stock (CS)	10,414	9,468	11,925	10,982	13,550	10,982	15,530	11,750	17,961	13,298	20,765	16,351
Advances to be converted in CS	-	1,411	-	731	-	2,458	-	4,355	-	6,046	-	6,358
Surplus and reserves	5,410	4,608	6,287	6,277	7,387	6,649	8,326	8,080	9,274	18,366	10,184	35,138
Total Capital and Reserves	15,824	15,487	18,212	17,990	20,937	20,089	23,856	24,185	27,235	37,710	30,949	57,847
Provision for depreciation of unrecorded appreciation of electric plants	479	533	570	672	686	1,095	828	2,298	996	1,621	1,199	11
Long-Term Debt												
Foreign exchange	10,647	8,678	14,416	13,972	18,162	18,064	20,518	30,271	21,205	39,533	22,074	39,949
Local currency	7,716	5,636	9,231	7,404	9,769	9,739	9,728	12,324	9,753	16,237	9,768	17,727
Total Long-Term Debt	18,363	14,314	23,677	21,376	27,931	27,803	30,246	42,595	30,958	55,770	31,842	57,676
Current Liabilities												
Accounts payable	583	485	647	616	710	749	793	1,565	886	2,616	929	3,184
Other	66	913	66	961	66	1,258	66	2,806	66	1,956	66	3,110
Current portion of long-term debt	1,013	989	1,241	486	1,579	742	1,755	1,103	2,243	1,081	2,568	4,234
Total Current Liabilities	1,662	2,387	1,954	2,063	2,355	2,749	2,614	5,474	3,195	5,653	3,563	10,528
Deferred credits	28	20	28	36	28	51	28	60	28	168	28	76
Total Liabilities	36,356	32,741	44,436	42,137	51,937	51,787	57,572	74,612	62,412	100,922	67,581	126,138

CHINA

THIRD POWER PROJECT

TAIWAN POWER COMPANY

Sources and Applications of Funds, 1971-76
(NT$ million)

Calendar year	1971 Estimated	1971 Actual	1972 Estimated	1972 Actual	1973 Estimated	1973 Actual	1974 Estimated	1974 Actual	1975 Estimated	1975 Actual	1976 Estimated	1976 Actual
Sources of Funds												
Internal cash generation												
Operating income	2,650	2,528	3,122	2,947	3,617	3,056	4,104	4,867	4,625	5,594	5,460	5,033
Other	-	180	-	121	-	42	-	146	-	137	-	164
Depreciation	1,080	1,166	1,237	1,508	1,419	1,797	1,638	2,750	1,808	3,007	2,227	3,475
Total	3,730	3,874	4,359	4,576	5,036	4,895	5,742	7,763	6,433	8,738	7,687	8,672
Issuance of stock to private shareholders	63	127	76	98	81	-	99	46	122	91	140	172
rowings												
Foreign exchange	3,626	2,091	4,452	5,836	3,947	5,165	2,591	13,507	1,380	10,730	1,008	4,631
Uncommitted future projects	-	-	199	-	747	-	860	-	879	-	1,752	-
Local currency	2,657	1,508	1,904	2,010	1,139	2,773	619	3,241	696	4,975	692	4,806
Total	6,283	3,599	6,555	7,846	5,833	7,938	4,070	16,748	2,955	15,705	3,452	9,437
Contribution in aid of construction	280	266	309	322	339	452	372	1,078	409	1,442	451	1,185
Salvage Value												
Retired assets	175	24	192	179	218	280	243	444	288	780	321	1,342
Construction	-	-	15	-	-	-	-	-	-	-	-	-
Total	175	24	207	179	218	280	243	444	288	780	321	1,342
Total Sources	10,531	7,890	11,506	13,021	11,507	13,565	10,526	26,079	10,207	26,756	12,051	20,808
Construction Program												
Foreign currency	4,441	2,063	4,644	5,763	3,940	4,091	2,326	13,085	2,176	9,518	3,543	3,275
Local currency	3,904	4,667	4,248	5,136	3,645	7,153	3,507	11,205	3,616	12,101	3,732	11,306
Total	8,315	6,730	8,892	10,899	7,585	11,244	5,833	24,290	5,792	21,619	7,275	14,581
Debt Service												
Amortization	908	1,050	1,013	1,288	1,241	1,255	1,579	1,595	1,755	2,452	2,243	4,479
Interest	1,140	705	1,386	862	1,810	865	1,967	942	2,071	1,560	2,261	1,855
Total	2,048	1,755	2,399	2,150	3,051	2,120	3,546	2,537	3,826	4,012	4,504	6,334
sh dividends to private shareholders	63	107	76	54	81	134	99	163	122	193	140	192
Increase in deferred debits	(4)	203	(4)	1	610	10	882	70	272	451	(97)	760
Net Variation in Working Capital												
Receivables/payables	(17)	213	(12)	(89)	(10)	(92)	(24)	(484)	(28)	(44)	30	(1,530)
Fuel, materials and other	73	1,118	92	7	121	149	117	(496)	152	526	119	471
Net Increase (Decrease)	56	(905)	80	(82)	111	57	93	(980)	124	482	149	(1,059)
Total Applications	10,478	7,890	11,443	13,022	11,438	13,565	10,453	26,079	10,136	26,756	11,971	20,808

Note: The actual information has been supplied by Taipower.

MAP - IBRD 3263R (PCR)

The map is ready but it will be included in the final report.