APPENDIX

APPENDIX I

Minutes of Meeting in FY 1987

M E M O R A N D U M

1. In accordance with the Scope of Work for the Feasibility Study on Effective Utilization of Banko Coal in the Republic of Indonesia, JICA sent the study team (No. A) headed by Mr. Takehiko Sato to the Republic of Indonesia from July 20 to July 29, 1987.

   According to the prepared program BPPT (the counterpart team) and the study team have discussed implementation plan of the coal gasification test, coal sampling work and other related works.

2. The study team prepared and provided 15 copies of the Inception Report Revised in July, 1987 to BPPT and relevant organizations.

3. After discussion, BPPT and the study team agreed on the Inception Report on July 28, 1987.

4. The study team explained that the Interim Report III (FY 1986) and its Summary would be provided by JICA around the beginning of August.

Jakarta, July 28, 1987

For Japan International Cooperation Agency

TAKEHIKO SATO
Leader of the
Study Team
Japan International
Cooperation Agency.

For the Agency for the Assessment and Application of Technology

SUBAGIO IMAM BAKRI
Leader of the Study Team
Agency for the Assessment
and Application of Technology.

MINUTES OF MEETING

1. The parties concerned (Badan Pengkajian dan Penerapan Teknologi, Pusat Pengembangan Teknologi Mineral and the survey team sent by Japan International Cooperation Agency, hereinafter, reffered to as BPPT, PPTM and JICA survey team, respectively) confirmed mutually that all the planned work had been performed satisfactorily, by strenuous efforts of the work team sent by PPTM and favored by fine weather.

2. Works performed at the site in the fiscal year, are as follows :
   i). Coal sampling for the coal gasification test in Serpong :
      a. Coal samples were taken from Jelawatan, Enim 1 and Enim 2 coal seam in North Suban Jeriji, and, from Mangus 1 (A-1), Mangus 2 (A-2), Suban 1 (B-1) Suban 2 (B-2) and Petai (C) coal seam by means of large diameter core drilling, respectively. (see attached sheet 1).
      b. Coal samples also were taken in Banjarsari and Arahan (A-2 coal seam) by pitting, on advice of Departemen Pertambangan, Direktorat Jenderal Pertambangan Umum, Direktorat Batubara (see attached sheet 1).
      c. Moreover, coal sample (from A-1 coal seam Air Laya pit) was collected at the stockyard, through the courtesy of Bukit Asam coal mine of PT. Tambang Batubara Bukit Asam (see attached sheet 1).

   ii). (Coal) spontaneous combustion test.
   The heading test was carried out at coal heaps (heiht 2.00 meters area of the base of cores : 36.3 m^2), constructed by fresh, unwhether coal in a old test pit excavated by shell in Central Banko (B-1 coal seam). The observations will be analyzed in detail by the hands of the JICA survey team in their report.
   The valuable observations on spontaneous combustion in the stockyard of Bukit Asam Coal Mine were presented by the safety department of PT. Tambang Batubara Bukit Asam.

3. The Indonesian counterpart expressed strongly the hope that spontaneous combustion test will be gone on in the 1988/89 fiscal year by the hands of the parties concerned, because spontaneous combustion is quite important and unavoiable matter for coal in South Sumatera coal field.

The JICA Survey Team promised that the hope expressed by the Indonesian counterpart would be conveyed to the JICA headquarters.

4. The valuable data for the feasibility study on Banko Coal effective utilization were presented by Departemen Pertambangan dan Energi, Direktorat Jenderal Pertambangan Umum, Direktorat Batubara and PN. Tambang Batubara.

5. The parties concerned expressed their gratitude for kind cooperation to the following Governmental Organizations.
   Departemen Pertambangan dan Energi, Direktorat Jenderal Pertambangan Umum, Direktorat Batubara.
   PN. Batubara
   PT. Tambang Batubara Bukit Asam.

25th September, 1987.

on the behalf of
BADAN PENGKAJIAN DAN PENERAPAN TEKNOLOGI,

PRAPTO HERYONO

on the behalf of
PUSAT PENGEMBANGAN TEKNOLOGI MINERAL,

KOMAR PRIATNA ANWAR

on the behalf of
JICA SURVEY TEAM,

TOMOYA KIKUCHI

MINUTES OF MEETING

1. In accordance with the Scope of Work for the Feasibility Study on Effective Utilization of Banko Coal in the Republic of Indonesia, JICA sent the study team (No.C) headed by Mr. Takehiko Sato to the Republic of Indonesia from Sep. 28 to Oct. 16, 1987.

   According to the prepared program, BPPT (the counterpart team) and the study team have performed satisfactorily all the following studies:

   i) Preliminary analysis of coal gasification test data

   ii) Preliminary evaluation of gasification characteristics of North West Banko Coal, Central Banko coal and North Suban Jeriji coal

   iii) Review and modification of coal gasification test procedure, if necessary

2. BPPT confirmed the acceptance of 30 copies of the Interim Report (FY 1986) sent by JICA

3. The study team prepared 15 copies of the Field Report summarizing the results of the study. After discussion. BPPT and the study team agreed on the Field Report on Oct. 16, 1987.
   Summary is as follows:

   i) 22 times of coal gasification tests have been already carried out by Oct. 9, using all 20 sorts of coal which were sampled at North West Banko, Central Banko and North Suban Jeriji.

ii) Almost of tests were succesful.
However, some fluctuations were recognized in generated gas composition because of air contamination and fluctuation of coal feed rate.

iii) After data analysis, it was confirmed that the test date obtained in this gasification test show almost same tendency with experiences by molton iron process.

iv) Preliminary estimation of gasification characteristics expected in a commercial plant is as follows:

Coal	Gas amount Nm3/coal-t	Gas composition % wet base		
		CO	H2	CO2
N.W. Banko (Mangus seam)	2089	54.1	30.4	3.6
C. Banko (Suban Seam)	1921	54.8	29.6	3.7
N.Suban J. (Enim Seam)	1835	54.0	30.2	3.6

It was confirmed that any technical difficulty would not be found in gasipication of Banko coal by molten iron process.

V) Further coal gasification test, including training of the counterpart, will be continued until the beginning of December, 1987.

4. The counterpart expressed strongly the hope that BPPT and PUSPIPTEK want to continue a coal gasification test using existing coal gasification test facilities.
The study team promised that the hope expressed by the counterpart would be conveyed to the JICA Headquarters.

5. The counterpart requested to open an evaluation meeting of the study in teh 2nd Stage (Coal Gasification Test Stage) at the beggining of Feb., 1988 at Jakarta.
The counterpart expressed the strong intention that they want to carry out the 3rd Stage (Feasibility Study Stage) in accordance with the Scope of Work.

The study team promissed to convey their request and intention to the JICA Headquarters.

Jakarta, October 16, 1987

For Japan International Cooperation Agency	For the Agency for the Assessment and Aplication of Technology
T. Sato Oct 16. '87	Wardiman
TAKEHIKO SATO	WARDIMAN DJOJONEGORO
Leader of the Study Team, Japan International Cooperation Agency	Deputy Chairman for Administration, Agency for the Assessment and Aplication of Technology

MINUTES OF MEETING

1. In accordance with the Scope of Work for the Feasibility Study on Effective Utilization of Banko Coal in the Republic of Indonesia, JICA sent the study team (A) headed by Mr. Hirotaka Sasaguri to the Republic of Indonesia from July 20 to December 12, 1987.

   Based on the prepared program, BPPT (the counterpart team) and the team (A) have performed the following studies satisfactorily;

   i) Analysis of coal sampled in 1986 and 1987.
   ii) Gasification of coal samples.
   iii) Documentation of the coal gasification data.
   iv) Analysis of gasification characteristics of each coal.

2. Both parties talked over the study results (Field Report) and agreed on them.

   The results of coal analysis, all data at gasification and analyzed results of gasification characteristics of each coal are attached.

3. Preliminary estimation of produced gas which excludes involved air and includes leaked gas are shown on the table 5-1.

4. Necessary jobs covering parts and putting desicant in them in order to keep the facilities in good condition were done. Besides this, BPPT agreed to circulate cooling water once a week to keep the circuit clean, during stoppage.

HIROTAKA SASAGURI
9th Dec. 1987. Serpong.
Gasification leader,
JAPAN INTERNATIONAL
COOPERATION AGENCY

WARDIMAN DJOJONEGORO
9.12.87
Deputy Chairman for
Administration, AGENCY
FOR THE ASSESSMENT AND
APPLICATION OF TECHNOLOGY

MINUTES OF MEETING

1. In accordance with the Scope of Work for the Feasibility Study on Effective Utilization of Banko Coal in the Republic of Indonesia, JICA sent the study team (No. D) headed by Mr. Takehiko Sato to the Republic of Indonesia from Feb. 15 to Feb. 24, 1988.

According to the prepared program, BPPT (the counterpart team) and the study team have discussed the following subjects:

i) Explanation and discussion in Draft Interim Report (Stage III)
ii) Discussion on "the necessity to step forward to the 3rd stage (feasibility study stage)" in accordance with the Scope of Work
iii) Explanation and discussion on the Implementation plan of the 3rd stage in FY 1988

2. The study team prepared 15 copies of the Draft Interim Report (Stage II) summarizing the results of the study in the 2nd stage. After discussion, BPPT and the study team agreed on the Draft Interim Report (Stage II) on Feb. 16, 1988.

Summary of discussion is as follows:

i) 40 times of coal gasification tests have been satisfactory carried out, using all 20 sorts of sample coal which were sampled at North West Banko, Central Banko and North Suban Jeriji.

The test data show some fluctuation in generated gas composition because of fluctuation of air amount contaminated and coal feed rate.

However analysis of the test data shows that almost of tests were successful and characteristics of Banko Coal could be grasped through gasification test.

Both sides confirmed that any technical difficulty for design of a large scale plant was not found in gasification test of Banko coal by the molten iron process.

ii) The master plan proposed in the Interim Report (Stage II) seems to be prospective. However built up schedule of the project should be studied furthermore in details in the 3rd stage of the study.

iii) The project seems to be feasible in technical and economic point of view. Therefore the detailed feasibility study will be carried out in the 3rd stage.

3. In accordance with the Scope of Work, both sides evaluated the results of the coal gasification test stage and discussed "the necessity to step forward to the 3rd stage (feasibility study stage)".

After discussion, both sides agreed to proceed the 3rd stage in view of technical and strategic aspects. Both sides confirmed that it is unnecessary to modify the Scope of Work.

4. The study team prepared 15 copies of the Draft Inception Report (Stage III) and explained the outline of the implementation plan of the study in FY 1988.

The counterpart (BPPT) agreed upon the implementation plan proposed by the study team, expressing strongly the following hopes:

i) BPPT and PUSPIPTEK explained their plan to continue a coal gasification test using the coal gasification test facilities provided by JICA.

For that purpose, BPPT requested to dispatch the experts of operation and maintenance as well as test planning and analysis for technical assistance.

ii) BPPT and MTDC explained their plan of spontaneous combustion test of Banko coal. For that purpose, BPPT requested to provide instrument for the test.

The study team promised that the hope mentioned above would be conveyed to the JICA Headquarters.

Jakarta, February 16, 1988

For Japan International Cooperation Agency

Feb. 16 '88

TAKEHIKO SATO

Leader of the Study Team, Japan International Cooperation Agency

For the Agency for the Assessment and Application of Technology

WARDIMAN DJOJONEGORO

Deputy Chairman for Administration, Agency for the Assessment and Application of Technology

APPENDIX II

List of Organization and Personal Visited

by the Study Team in the 2nd Stage

FY 1985

Organization	Name
BBPT	Dr. Wardiman Djojonegoro
	Mr. Subagio Imam Bakri
	Mr. Bambang Suwondo
	Mr. Achmad Setiadi
	Mr. Djoko Sulaksono
	Mr. Herry Supriyanto
	Mr. Suharjono
	Mr. M. Harsono
PUSPIPTEK	
	Mr. Rustamadji
	Mr. Sulaiman Kurdi
PPTM	Mr. Bambang Sulasmoro
	Mr. Komar P.A.
	Mr. Zurni M. Nur
	Mr. J.K. Massora
	Mr. Yuyun Basyuni
	Mr. Samsa
	Mr. Arifin Karim
	Mr. Hadi Nursarya
	Mr. Burhandin
	Mr. Kusunawan
	Mrs. Nunung N.
PTBA	Mr. Soetjipto Wijodi
	Mr. A. Suhatri Arif
	Mr. Andi Massalangka
	Mr. Rachmen Soekandi
	Mr. C.S. Jauary
DOC	Mr. Brawi Hendarto
PLN	Mr. R.M. Sayid Budihardjo
	Mr. Sugeng Pribadi
	Mr. Lumbangaol
Pertamina	
	Mr. H. Arifin Abubaka
	Mr. R. Siregar
	Mr. Susilo Martodiwirjo
	Mrs. T. Indrawanti Pudiyanto
	Mr. P. Agus Budiasto
	Mr. Imam Soeharto
	Mr. Abdul Gani
	Mr. Yan Iskandar
	Mr. M.S. Mustafa
Ministry of State for Population and Envrionment	
	Prof. Dr. Koesnadi Hardjasoemantri
D.G. of Sea Communication	
	Mr. Zainal Abidin
	Mr. M. Soewignjo

FY 1986

Organization	Name
BPPT	Dr. Wardiman Djojonegoro
	Mr. Subagio Imam Bakri
	Mr. Bambang Suwondo
	Mr. Achmad Setiadi
	Mr. Djoko Sulaksono
	Mr. Herry Supriyanto
	Mr. Suharjono
	Mr. M. Harsono
	Mr. Untung Sumotarto
	Mr. Unggul Priyanto
	Mr. Prapto Heljono
	Mr. Amiral A.
	Mr. Helmy Said
	Mr. Joko Prihiastoto
	Ms. Saraswati
	Mr. Indra Budi Susetyo
	Mr. Ayusak Lubis
	Mr. Fathor Rahman
	Mr. Eddy
	Mr. Teddy
PUSPIPTEK	
	Mr. Sulaiman Kurdi
PPTM	Mr. Komar P.A
	Mr. Yuyun Basyuni
	Mr. Koen Mabsora
	Mr. Endang Yuyu Wiraatmadja
	Mr. Mochammad Rochim
PTBA	Mr. Soetjipto Wijodi
	Mr. Ardi Massalangka
	Mr. Rachman Soekandi
	Mr. Zulyadin
DOC	Mr. Subandoro
	Mr. Parigan
PLN	Mr. Sudjanadi
	Mr. P. Oka
	Mr. A. Soetjipto
	Mr. Krisno Pandito
	Mr. Sofyan Taca
CV RENE	
	Mr. Thalib Nasution
Pertamina	
	Mr. H. Sudradjat
	Mr. Torie Setiawan
	Mr. L.M.L. Tobing
	Mr. Djoko Hernowo
	Mr. Ibrahim L. Chaniago
	Mr. Hardono
	Mr. Bambang Pitoyo
	Mr. Javed Sumbung
	Mr. Santoso Koerdi
Ministry of State for Population and Environment	
	Ms. Sri Hudyastuti
	Mr. Hendra Setiawan
D.G. of Electric Power & New Energy	
	Ms. Maritje Hutapea
	Mr. Maraudin Panjaitan

D.G. of E & NE

Ms. Maritje Hutapea
Mr. Pemayun
Mr. M. Panjaitan

C.B. of Statistics

Mr. Soewondo
Mr. T.H. Suprono
Ms. Supati
Mr. L. Gintung

D.G. of MIGAS

Mr. T. Sitanggang
Mr. Widartomo
Mr. E.E. Hantoro Ariadji
Mr. Gono Soedimo
Mr. Hasyim

D.G. of Basic Chemical Industries

Mr. Soenaryo Danusaputro
Mr. Jaweldin Purba
Mr. H. Silaen

D.G. of Industry

Mr. J. Purba
Mr. Waluyo

LEMIGAS

Mr. Hendro Prawoto
Dr. Rachman Subroto
Mr. Hirwan Effendi

Ministry of Communication

Mr. Maskur Effendi
Mr. Mahdi Siahaan
Mr. Soemanto
Ms. Amala Nurhaida
Mr. Panal S.
Mr. Toga Hutabarat

Ministry of Transmigration

Dr. Soedjino

FY 1987

Organization	Name
BPPT	Dr. Wardiman Djojonegoro
	Dr. Lolo M. Panggabean
	Dr. Zuhal
	Dr. Hotma Tobing
	Mr. J. Morsito
	Mr. Subagio Imam Bakri
	Mr. Bambang Suwondo Rahardjo
	Mr. Suharjono
	Mr. E.S Sudirahardja
	Mr. Mahally Kudsi
	Mr. Dwi Husodo
	Mr. Herry Supriyanto
	Mr. Bungkus Prihadi
	Mr. A. Setiadi
	Mr. Suardi
	Mr. Hasnedy
	Mr. Amiral A.
	Mr. Novianto
PUSPIPTEK	
	Mr. Sulaeman Kurdi
	Ms. Yusunitati
	Mr. Heru Kuncoro
	Mr. Herman A.
	Mr. Riyanto M.
	Mr. Roy Indra
	Mr. Darmawan
	Mr. Soni S.
	Mr. Didik BT
	Mr. Roughman
	Mr. Taufik S.
PPTM	Mr. Bambang Sulasmoro
	Mr. Komar Priatna Anwar
	Mr. Soedjoko
	Dr. U.W. Soelistijo
	Mr. Yuyun Basyuni
	Mrs. Nunung N.
	Mr. Wahju K.
	Mr. Engkos Kosasih
	Mr. Machmmad Rochim
PTBA	Mr. Rachman Soekardi
	Mr. Soetjipto Wijodi
DOC	Mr. Johannas
	Mr. Sbandro
	Mr. Abderhachman
PTB	Dr. M. Kusna
	Mr. Soehandojo
	Mr. Adeng Sumardy

APPENDIX III

Member List of the JICA Mission

in the 2nd Stage

FY 1985

NAME	UNDERTAKING	AREA OF EXPERTISE
Takehiko SATO	Team Leader	Registered Consulting Engineer in Mechanical Engineering
Shozo IDA	Assistant Leader, Coal Mining	Mining Engineer
Taizo HAYASHI	Assistant Leader, Energy Demand & Supply for Transportation	Evaluation of Alternative Energy
Tomoya KIKUCHI	Coal Miing	Mining Engineer
Kimihiko ITO	Coal Mining	Mining Engineer
Yutaka KANBAYASHI	Coal Analysis	Analyst
Atsushi NAKAI	Equipment Installation	Chemical Analyst
Shozo OKAMURA	Pilot Plant Building	Authorized Building Engineer
Toshitake YANAGI	Pilot Plant Building	Authorized Building Engineer
Katsunobu UDAGAWA	Pilot Plant Building	Authorized Building Engineer
Naomichi NIRE	Pilot Plant Building	Authorized Building Engineer
Hisao NISHIMURA	Pilot Plant Building	Authorized Building Engineer
Mitsuichiro FUKUDA	Pilot Plant Building	Authorized Building Engineer
Akira IKEZAWA	Methanol Cost	Project Engineer
Shigeo NAKAJIMA	Methanol Cost	Registered Consulting Engineer

FY 1986

NAME	UNDERTAKING	AREA OF EXPERTISE
Takehiko SATO	Team Leader	Registered Consulting Engineer in Mechanical Engineering
Shozo IDA	Assistant Leader, Leader of Coal Mining	Mining Engineer
Tomoya KIKUCHI	Coal Miing	Mining Engineer
Hajime NOZAKI	Coal Mining	Mining Engineer
Tatsuya YONEMITSU	Mining Cost Estimation	Mining Engineer
Atsushi NAKAI	Equipment Installation	Chemical Analyst
Taizo HAYASHI	Energy Demand Forecast	Evaluation of Alternative Energy
Ryo SUZUKI	Methanol Production & Distribution System	Chemical Engineer
Masayoshi SOGA	Demand Projection of Fuel Alcohol	Chemical Engineer
Satoru NISHIYAMA	Ethanol Production & Distribution System	Chemical Engineer
Kenjiro TAKASE	Utilization Technology of Fuel Alcohol	Mechanical Engineer
Hamao HAYASHI	Environment & Safety	Applied Chemistry
Hirotaka SASAGURI	Leader of Test Plant Construction	Mining Planning
Ichiro TANIWAKI	Mechanical Construction	Mechanical Engineer
Toru MURAKAMI	Control of Electrical Work and Instrumentation	Electrical Engineer
Toshitaka YANAGI	Leader of Test Operation, Test Plant Building	Authorized Building Engineer
Yoshiharu NAKASHITA	Design of Electric System	Electrical Engineer
Yasuaki HATAKEYAMA	Process Analysis	Technology of Coal Utilization
Koichi TANAKA	Test Plant Operation	Mechanical Operation

Shinji SUGIMOTO	Instrumentation	Electrical Engineer
Shigeharu YAMAGUCHI	Furnace Construction	Furnace
Kimikazu OTANI	Melting Furnace Control	Furnace
Noboru ENDO	Melting Furnace Operation	Operation of Blast Furnace
Masanobu KOBATAKE	Gasification Furnace Operation	Operation of Gas Furnace

FY 1987

NAME	UNDERTAKING	AREA OF EXPERTISE
Takehiko SATO	Team Leader	Registered Consulting Engineer in Mechanical Engineering
Shozo IDA	Assistant Team Leader, Chief of Integrated Evaluation	Mining Engineer
Hirotaka SASAGURI	Aassistant Team Leader, Chief of Coal Gasification Test	Mining & Mechanical Engineering
Mitsuichiro FUKUDA	Process Analysis	Coal Gasification Technology
Koji OKANE	Process Analysis	Coal Gasification Technology
Yasuaki HATAKEYAMA	Coal Gasification	Coal Gasification Technology
Toshitaka YANAGI	Coal Gasification	Mechanical Engineering
Ichiro TANIWAKI	Mechanical Maintenance	Mechanical Engineering
Koichi TANAKA	Gasification Plant Operation	Gasification Plant Operation
Masanobu KOBATAKE	Ditto	Ditto
Keiichi NISHIMURA	Ditto	Ditto
Katsuya KITAGAWA	Ditto	Ditto
Noboru ENDO	Ditto	Ditto
Chikara SAKIMURA	Ditto	Ditto
Hiroyuki OKADA	Instrument Maintenance & Gas Analysis	Instrumentation
Mitsuru AOYAMA	Iron & Slag Analysis	Analyzing Technology
Kimikazu OTANI	Furnace Adjustment	Electrical Engineering
Toru MURAKAMI	Electrical Maintenance	Electrical Engineering
Tomoya KIKUCHI	Coal Mining	Mining Engineering
Hajime NOZAKI	Geology	Geological Engineering

Ryo SUZUKI	Production & Distribution System of Fuel Methanol	Chemical Engineering
Taizo HAYASHI	Energy Demand Forecast	Energy Economics

JICA