Ⅶ　付　　属　　資　　料

1. S／W

SCOPE OF WORK

FOR

THE FEASIBILITY STUDY ON CITY GAS DISTRIBUTION SYSTEMS

IN THE KLANG VALLEY AREA OF MALAYSIA

AGREED UPON BETWEEN

THE ECONOMIC PLANNING UNIT OF THE

PRIME MINISTER'S DEPARTMENT

ON BEHALF OF

THE GOVERNMENT OF MALAYSIA

AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

KUALA LUMPUR
24TH JANUARY, 1986.

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KUALA LUMPUR, JANUARY 1986

(DATO SERI RADIN SOENARNO AL-HAJ)
DIRECTOR GENERAL
ECONOMIC PLANNING UNIT
PRIME MINISTER'S DEPARTMENT
ON BEHALF OF
THE GOVERNMENT OF MALAYSIA

(DR. KENJI TOMITA)
LEADER OF THE
PRELIMINARY SURVEY TEAM
ON BEHALF OF
THE JAPAN INTERNATIONAL
COOPERATION AGENCY

I. INTRODUCTION

In response to the request of the Government of Malaysia, the Government of Japan has decided to conduct a Feasibility Study on City Gas Distribution Systems in the Klang Valley Area (hereinafter referred to as "the Study"), and in accordance with the relevant laws and regulations in force in Japan, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programmes of the Government of Japan, will undertake the Study in close cooperation with the authorities of Malaysia.

The present document sets forth the Scope of Work with regard to the Study.

II. OBJECTIVE OF THE STUDY

The objective of the Study is to examine the technical, economic and financial feasibility of city gas distribution systems utilizing the natural gas to be introduced into the Klang Valley Area by 1990. The Study shall cover the period of 5 years from 1990.

The Study area covers the Federal Territory of Kuala Lumpur and the other growth centres of Petaling Jaya, Shah Alam, Klang, Bandar Baru Selayang, Bangi and other conurbation areas in the Klang Valley.

III. SCOPE OF THE STUDY

In order to achieve the above objective, the Study shall cover the following items:

1. The background and relevant conditions
   (1) General economic situation of Malaysia.
   (2) Present situation and policies on the Peninsular Gas Utilization Project.
   (3) Relevant laws and regulations.

2. Demand forecast for city gas
   (1) Survey of the current energy consumption.
   (2) Forecast of the growth in energy consumption.

(3) Estimation of the share of city gas in the total energy consumption.

(4) Revision of the demand for city gas based on the effect of introducing city gas.

3. Conceptional design of the basic structure of the integrated gas distribution system

(1) Design of the basic route and the gas transmission system.

(2) Selection of gas distribution system.

(3) Study on other facilities of gas supply system.

4. Study of the construction schedule of the city gas distribution system

(1) Preparation of the outlined schedule of introducing the city gas system.

(2) Preparation of the outlined schedule of constructing the transmission pipeline and its major auxiliary facilities.

(3) Introduction of distribution system using LPG and other forms of gas as an initial step towards final conversion to natural gas.

5. Estimation of the construction cost

(1) Number of facilities to be constructed.

(2) Unit cost of construction items.

(3) Total construction cost.

6. Financial analysis

(1) Overall investment costs (local and foreign).

(2) Expenditure schedule of investment costs.

(3) Financing scheme.

(4) Production cost.

(5) Estimation of capital contribution and gas price structure.

(6) Projected balance sheet.

(7) Projected income statement.

(8) Projected cash flow statement.

(9) Financial internal rate of return.

(10) Sensitivity analysis.

7. Organization and management aspects

8. Environment and safety

9. Economic and social evaluation

10. Conclusion and recommendation

IV. STUDY SCHEDULE

The whole work will be conducted in accordance with the attached tentative schedule.

V. REPORTS

JICA shall prepare and submit the following reports in English to the Government of Malaysia.

1. Inception Report

   30 copies

   At the beginning of the Study in Malaysia

2. Progress Report

   30 copies

   At the end of field work

3. Interim Report

30 copies

Within 7 (seven) months after the commencement of the Study

4. Draft Final Report

30 copies

Within 10 (ten) months after the commencement of the Study

The Government of Malaysia will provide JICA with its comments within 1 (one) month after the receipt of the Draft Final Report

5. Final Report

50 copies

Within 2.5 (two and half) months after the receipt of the Government of Malaysia's comments on the Draft Final Report

The Study team should ensure that all data, information, maps, materials and findings connected with the Study are kept confidential and not disposed of or revealed to any third party except with the prior written consent of the Government of Malaysia. Such maps and aerial photographs are to be returned to the Government of Malaysia immediately upon completion of the Study. All reports when finalized and submitted to the Government of Malaysia shall remain the property of the Government of Malaysia.

VI. UNDERTAKINGS OF THE GOVERNMENT OF MALAYSIA

To facilitate the smooth conduct of the Study, the Government of Malaysia shall take the following necessary measures:

1. To inform the members of the Study team of any existing risk in the Study area and to take any measures deemed necessary to secure the safety of the Study team.

2. To secure the necessary entry permits for the Study team to conduct field surveys in Malaysia and exempt them from consular fees.

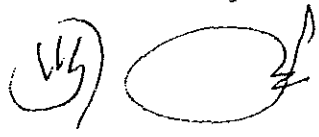
3. To exempt the members of the Study team from taxes and duties, as normally accorded under the provision of Malaysian General Circular No. 1 of 1979, on equipment, machinery and other materials brought into and out of Malaysia for the conduct of the Study.

4. To exempt the members of the Study team from Malaysian income tax on their official emoluments in respect of their period of assignment in Malaysia in connection with the conduct of the Study but the Government of Malaysia shall retain the right to take such emoluments into account for the purpose of assessing the amount to be applied to income from other sources.

5. To provide the necessary facilities to the Study team for remittance as well as utilization of funds introduced into Malaysia from Japan in connection with the conduct of the Study.

6. To secure permission for entry into private properties or restricted areas for the conduct of the Study.

7. To provide the Study team with medical services when needed but the expenses will be chargeable to the members of the Study team.



8. To make arrangements for the Study team to take back to Japan the data, maps and materials connected with the Study, subject to the approval of the Government of Malaysia, in order to prepare the reports.

9. To provide the Study team with available data, maps and information necessary for the execution of the Study.

10. To appoint counterpart personnel to the Study team during the Study period.

11. To provide the Study team with suitable office space with clerical service and necessary office equipment in Kuala Lumpur.

12. To provide the Study team with adequate means of local transport for official travel only.

13. To indemnify any member of the Study team in respect of damages arising from any legal action against him in relation to

any act performed or omissions made in undertaking the Study except when the two Governments agree that such a member is guilty of gross negligence or wilful misconduct.

14. To nominate PETRONAS Dagangan Sdn. Bhd. to act as counterpart agency for the Study and the Economic Planning Unit as the main coordinating body in relation to other relevant Governmental and non-Governmental organizations.

VII. UNDERTAKINGS OF JICA

In order to conduct the Study, JICA shall take the following measures:-

1. To despatch, at its own expense, the Study team to Malaysia.

2. To pursue technology transfer to the Malaysian counterpart personnel in the course of the Study.

VIII. CONSULTATION

JICA and the Government of Malaysia shall consult each other in respect of any matter that is not agreed upon in this document and which may arise from or in connection with the Study.

APPENDIX

TENTATIVE SCHEDULE OF THE STUDY

Item \ Year & Month	1986									1987				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Preparatory Office Work	▭													
Inception Report		△												
Field Work		▨	▨	▨										
Progress Report				△										
Home Office Work				▭	▭	▭								
Interim Report							△							
Supplementary Field Work							▨	▨						
Home Office Work								▭	▭					
Draft Final Report										△				
Discussion of the Results											▨			
Supplementary Office Work											▭	▭	▭	
Final Report														△

▨ in Malaysia ▭ in Japan

2. ミ ニ ッ ツ

MINUTES OF MEETING

The JICA Preliminary Survey Team for the Feasibility Study on City Gas Distribution Systems in the Klang Valley Area visited Malaysia from 16th to 25th January 1986. The Team had a series of discussions with the relevant Malaysian authorities, namely the Economic Planning Unit of the Prime Minister's Department and PETRONAS Dagangan Sdn. Bhd. During the Steering Committee meetings held at Kuala Lumpur on 17th, 21st and 22nd January 1986, both the JICA Team and the Malaysian side discussed the proposed Scope of Work drafted by JICA and the conclusions of the meetings are as follows:-

1. Both sides agreed on the format of the Scope of Work.

2. The JICA Team agreed to the elaboration of Item III of the Scope of the Study contained in the Scope of Work, as follows:-

   (a) Sub-item 2(1)

   The survey of current energy consumption shall be by categories of consumer and source.

(b) Sub-item 2(2)

Forecast of growth in energy consumption shall be by categories of consumer and source.

(c) Sub-item 3(1)

Design of the basic route and the gas transmission system shall take into account of utility reserves.

(d) Sub-item 6(4)

Production cost shall mean product costing i.e. cost of delivering gas to consumers excluding profit, taking the cost of gas from the Peninsular Gas Utilization Projects as given.

(e) Sub-item 6(5)

Estimation of appropriate capital contribution and gas price structure shall be by various categories of consumer.

3. The JICA Team confirmed that JICA will arrange training courses in Japan for Malaysian counterpart personnel and bear their travelling and living expenses.

4. Members of the Malaysian side and the Japanese side who attended the Steering Committee meetings are as listed in Attachment A.

(DR. MOHD. YUSOF ISMAIL)
Director,
Industry Section,
Economic Planning Unit,
Prime Minister's Department,
Malaysia.

(DR. KENJI TOMITA)
Leader,
JICA,
Preliminary Survey Team.

Kuala Lumpur,
24th. January, 1986.

Attachment A

MEMBER LIST

Malaysian Side

1.	Dr. Mohd Yusof Ismail	Director of Industry, Economic Planning Unit, Prime Minister's Department. (Leader)
2.	Mdm. Husniarti Tamin	Economic Planning Unit, Prime Minister's Department
3.	Mdm. Wong Peg Har	Economic Planning Unit, Prime Minister's Department
4.	Mdm. Ruhaizah Mohd Rashid	Economic Planning Unit, Prime Minister's Department
5.	Miss Siti Rohana Abd. Wahab	Ministry of Federal Territory
6.	Mdm. Norasiah Yahya	Klang Valley Planning Secretariate, Prime Minister's Department
7.	Mr. Khoh Joo Bee	Selangor State Secretariate
8.	Mr. Misrun Timin	Implementation Coordination Unit, Prime Minister's Department
9.	Mr. Ismail Kamari	PETRONAS Dagangan Sdn. Bhd.
10.	Mr. Madzpur Abd. Rahman	PETRONAS Dagangan Sdn. Bhd.
11.	Mr. Abdul Rahim Ismail	PETRONAS Dagangan Sdn. Bhd.
12.	Mr. Abdul Rahim Mohamad	PETRONAS Dagangan Sdn. Bhd.
13.	Mr. Zulkifli Hamzah	PETRONAS Dagangan Sdn. Bhd.
14.	Mr. Cheng Fun Siow	PETRONAS Gas Sdn. Bhd.
15.	Mr. Abdul Gani Abdullah	PETRONAS Gas Sdn. Bhd.
16.	Mr. Abu Bakar Ismail	PETRONAS Gas Sdn. Bhd.
17.	Mr. Raihan Sharif	Economic Planning Unit, Prime Minister's Department

Japanese Side

1.	Dr. Kenji Tomita	Japan International Cooperation Agency (JICA), Tokyo (Leader)
2.	Mr. Isao Asai	Ministry of International Trade and Industry
3.	Mr. Tetsuhiko Tsunoda	Japan Consulting Institute
4.	Mr. Masahiro Ueshima	Japan Consulting Institute
5.	Mr. Keizo Kagawa	JICA, Tokyo
6.	Mr. Michio Okahara	Embassy of Japan, Kuala Lumpur
7.	Mr. Makoto Nakamura	JICA, Kuala Lumpur
8.	Mr. Kenichi Imai	JICA, Kuala Lumpur

3. 対 処 方 針

対 処 方 針

マレイシア国クランバレー都市ガス供給開発計画

事 前 調 査

国 際 協 力 事 業 団

鉱工業計画調査部

1985年12月

1 調査の目的

1）調査の背景・経緯

マレイ半島東部のトレンガヌ沖に産出する天然ガスを有効利用するため、マレイシア政府はマレイ半島横断パイプライン計画に着手しており、１９９０年には首都クアラルンプルを含むクランバレー地域にパイプラインが延長される予定である。

首都圏として急速に発展している同地域にこの天然ガスを利用した都市ガス供給システムを設立するため、マレイシア政府は我が国に対し、８５年３月ＦＳの要請を行った。

本件は、この要請を受けて本格調査の実施に先立ちＳＷ協議のため、８６年１月冨田堅二を団長とする事前調査団を派遣するものである。

2）プロジェクトの概要

マレイ半島ガス有効利用計画の一環として、クランバレー地域のガス需要、パイプラインシステム、ガスホルダー等の建設、所要資金、実施機関及び実施スケジュール等の検討により、都市ガス供給計画を策定し、企業化の可能性について調査を行う。

2 相手国政府関係機関

ＥＰＵ（企画庁）、ＰＥＴＲＯＮＡＳ（国営石油会社）、
ＫＬ連邦政府

3 調査の範囲、対処方針等

ＳＷ協議にあたり次のとおり対応する。

1）Ⅱ調査の目的

１９９０年以前におけるＬＰＧガスによる暫定的な都市ガス供給システムの設立については　パイプライン延長計画の実施状況等により導入可能性について先方政府と協議を行い、必要であれば調査の目的に加えることとする。

2）Ⅲ調査の範囲

３において、都市ガス供給システムの主要施設に関する基本設計の要請がなされているが、概念設計に留め交渉に臨む。ただし、先方政府の要請が強く、かつ、本格調査において可能な範囲の内容であれば、ＳＷではＤｅｓｉｇｎとし詳細設計の範囲に入らないようミニッツに定める。

また、ガスホルダー等関連施設に関するエンジニアリングの事項については、Ｓｔｕｄｙの表現で交渉を行うこととし、合意が得られない場合には　ＦＳの範囲で他の表現に改める。

４において、必要な場合には暫定的なＬＰＧガスシステムについて検討する項目を加える。

3）Ⅵマレイシア側のＵＮＤＥＲＴＡＫＩＮＧ

原案で臨むものの　前例を理由に変更を求められた場合には、原則として社会開発協力等にて署名されているＳＷの項目（別紙）にて対応する。

なお、機材等の持出に関する免税措置については先方政府が前例を理由に削除を求めた場合には、その意図を確認し、東京に請訓する。

4）Ⅶ日本側のＵＮＤＥＲＴＡＫＩＮＧ

ＳＷ案では調査団員の旅費等の負担に関する事項を３項として加えていないが、他の例に準じる様要請された場合には、東京に請訓する。

また研修員の受入に触れておらず先方政府より要求される事が想定されるがミニッツにて対応することとする。

5）国内作業

技術移転のため、日本国内で行われている分析作業を現地にて行うよう強く要望される事が予想されるが、これに対しては中間報告、研修員受入、ドラフト説明等により対応することで交渉に望むこととする。合意に至らない場合には　東京に請訓する。

6）調査期間

先方政府と協議し、可能な範囲で弾力的に対応する。

4. T/R

TERMS OF REFERENCE

F/S OF CITY GAS DISTRIBUTION SYSTEMS IN KELANG VALLEY AREA

CONTENTS

1. BACKGROUND

1. General

As part of its effort to develop the use of its abundant gas as a new form of energy source for the country which is now dependent on oil to the extent of 90 per cent of its needs, PETRONAS is now promoting the Peninsular Gas Utilization Project, which includes the city gas supply for urban area as well as the gas usage in industries and for power generation.

In this framework, PETRONAS DAGANGAN has decided to ask the Japanese government to carry out the feasibility study (F/S) (under its technical cooperation program) for introducing city gas distribution system into the Kelang Valley area (the Project Area) which covers Kuala Lumpur and its satellite towns, Petaling Jaya, Shah Alam, Port Klang and their neighboring areas to be developed in the near future.

2. The Peninsular Gas Utilization Project

The objective is to harness Malaysian natural gas found offshore Terengganu for use as a substitute for oil. There are three stages of implementation as follows :

Stage I of the project which is now underway, involves gas-gathering offshore Terengganu and processing and distributing of the gas firstly within the State. The National Electricity Board and the Heavy Industries Corporation of Malaysia will be the initial users of the gas for a 900-megawatt power station at Paka and a steel mill in Telok Kalong respectively.

Meanwhile, propane and butane extracted from the gas would be transported south to Tanjung Berhala where an LPG export terminal is being located.
The LPG will be made available to the domestic market as cooking gas and automobile fuel, as well as for export.

Stage II also referred to as the Trans-Peninsular Gas Pipeline Project, would make it possible for the natural gas to be transmitted to the West Coast of Peninsular Malaysia.

This pipeline would begin at Telok Kalong, move south towards Kuantan and then swing across the middle of the Peninsular up to a junction, from where a branch line would be laid to Port Dickson and Port Kelang.
Another branch would proceed south to Johor Bharu and Singapore.

As a first step towards the realization of this mammoth project, a consortium of local and foreign firms has conducted the selection and optimisation of the pipeline route.

After finalization of the pipeline route, the procedures for engineering, procurement and construction will be started. By the time the project is completed, it may well be the largest single investment to be undertaken in Malaysia, surpassing the record set by the LNG plant.

Stage III, the gas pipeline would be expanded northwards to Prai.

3. City gas distribution project

Though the initial consumers to be supplied with natural gas would be the major power stations along the West Coast, gas would also be made available to industrial plants and other consumers along and in the vicinity of the pipeline route.

So, in order to efficiently utilize the natural gas to be transported to the west coast of the peninsular under the Stage II, PETRONAS is now planning to introduce the city gas distribution systems into the Project Area.

II. OBJECTIVES

The basic objective of the F/S is to determine the economic and technical feasibility of constructing the city gas distribution systems utilizing the natural gas to be introduced into the Project Area in 1990.

Briefly, the study shall

a) establish whether it is justifiable to introduce the systems.

b) determine the most appropriate systems which integrally covers the whole Project Area.

c) recommend the most suitable construction steps of the systems including the provisional steps of applying small size network systems using LPG to industrial areas and satellite towns to be newly built before the introduction of the natural gas.

d) prepare cost estimation of the construction of the systems.

e) prepare detailed financial and economic analysis.

f) prepare a detailed prescription of a management organization responsible for undertaking the project and running the system effectively.

III. PROJECT DESCRIPTION

1. Outline of the project

The main purpose of the project is to efficiently utilize the natural gas to be transmitted through the Trans-Peninsular Gas Pipeline described in Section 1-2 of these Terms of Reference to the West Coat of the Peninsular from offshore Terengganu. The Trans-Peninsular Gas Pipeline is scheduled to deliver 600 MMCFD (Million Feet Per Day) of the natural gas to the Kelang Valley by 1990. The natural gas will be firstly utilized for the three power plants on the West Coast, and then the balance of the natural gas will be utilized for this project.

Meanwhile, as provisional systems before the introduction of the natural gas, some satellite distribution systems of LPG integrated to the natural gas system would be installed in the Project Area.

Such satellite distribution systems will use some part of 250,000MT/Yr of LPG to be available by January 1985 from the gas processing plant and a refinery located in Kerteh on the east coast.

2. The Project Area

As shown in the map of Attachment 1, the Project Area covers a part of Kelang Valley, the Federal Territory of Kuala Lumpur, its satellite towns (Selayang, Gombak, Ulu Kelang, Ampang, Cheras and Kajang), Petaling Jaya, Shah Alam and Kelang.

The total population in the project area was 1,664,702 in 1980 and there were 347,062 households in 1980 and 140 hotels in 1984, as described on Attachment 2.

The numbers of households of each class classified by their income in the Federal Territory (1980-2000) are described on Attachment 3 and the rough distribution plan of residential and industrial area in the Project Area is shown on Attachment 4.

In addition, the consumer prices of energy (1979-1984) can be referred to Attachment 5.

3. The Project Period

The F/S shall cover the period of 5 years which starts from 1990 when natural gas is scheduled to be introduced to the Project Area.

And it also studies the years before 1990 as the provisional stage of introducing the city gas system using LPG.

IV. SCOPE OF THE F/S

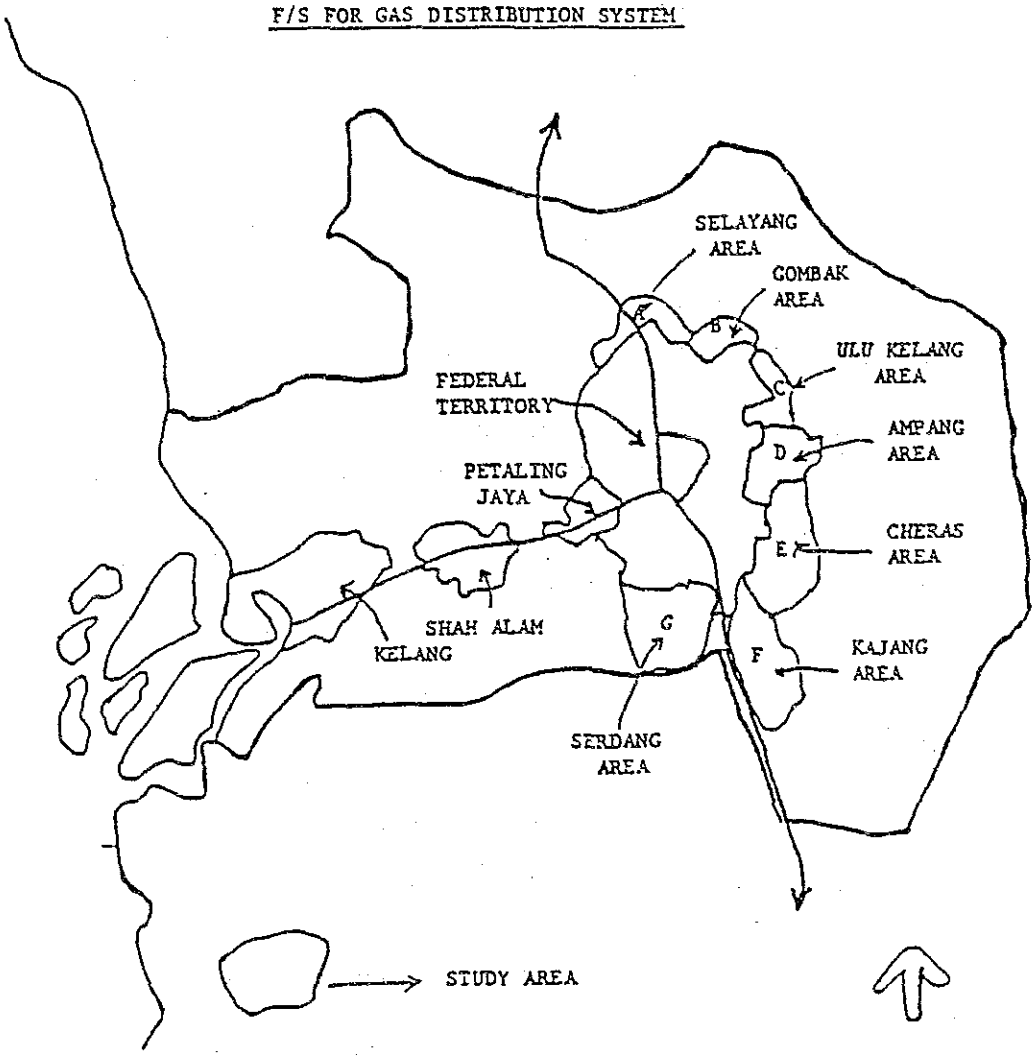
1. Prediction of the demand for city gas

The studies shall be performed to predict the demand for city gas by the consumers in the designated categories in the Project Area.

(1) Survey of the energy consumption at present

The amount of all forms of energy being consumed at present by the consumers of classified categories in the project area shall be investigated.

THE KLANG VALLEY
F/S FOR GAS DISTRIBUTION SYSTEM



NO. OF PUPULATION, HOUSEHOLDS, FACTORIES AND HOTELS IN KELANG VALLEY

AREA	TOTAL POPULATION (1980 CENSUS)	NO. OF HOUSEHOLDS (1980 CENSUS)	NO. OF FACTORIES IN PRODUCTION AS AT 31-12-82	NO. OF HOTELS AS AT 31-10-84		NO. OF UPCOMING HOTEL PLANNED BY 1986
				WITH 100 ROOMS AND MORE	WITH LESS THAN 100 ROOMS	
1. Federal Territory	977,102	208,605	326	17 (4,119)	114 (2,806)	6 (3,153)
2. Selayang	67,259	13,317	29	-	-	-
3. Gombak	49,105	4,377		-	-	-
4. Ulu Kelang/Ampang	64,635	20,261	9	-	-	-
5. Cheras	22,213	4,658	31	-	-	-
6. Kajang	33,984	6,021		-	-	-
7. Serdang	31,478	5,120		-	-	-
8. Petaling Jaya Municipality Area	207,805	44,515	254	3 (723)	4 (135)	-
9. Shah Alam Municipality Area	19,041	5,432	133	-	-	2 (250)
10. Kelang Municipality Area	192,080	34,756	70	-	2 (39)	1 (120)
Total	1,664,702	347,062	852	20 (4,842)	120 (2,980)	9 (3,523)

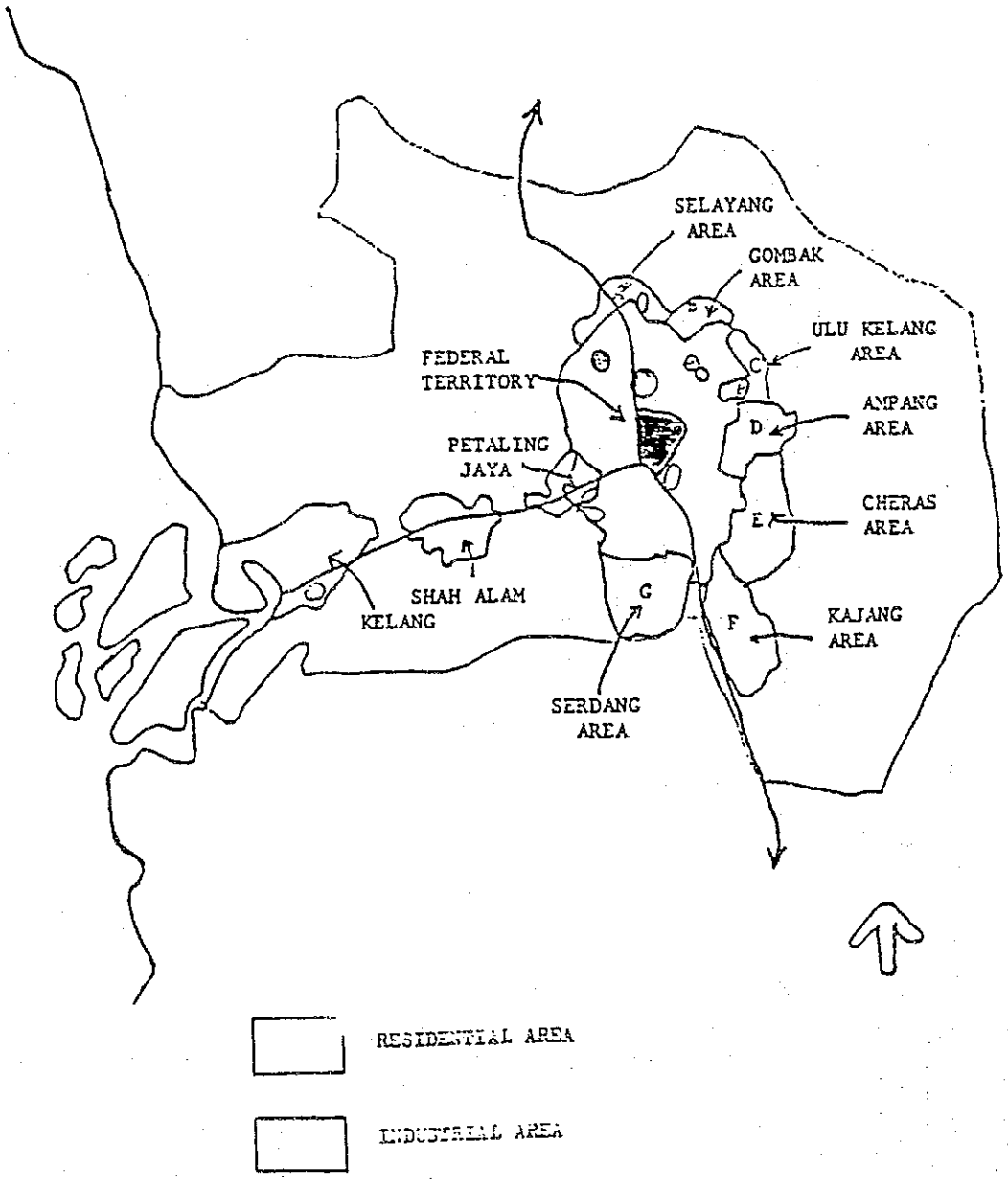
NOTE: Figures in bracket denote total number of hotel rooms

ATTACHMENT 3

FEDERAL TERRITORY: HOUSEHOLD TOTAL INCOME DISTRIBUTION 1980-2000

1980		1990		2000	
MONTHLY INCOME ($)	NUMBER OF HOUSEHOLD	MONTHLY INCOME ($)	NUMBER OF HOUSEHOLD	MONTHLY INCOME	NUMBER OF HOUSEHOLD
50	1,501	80	2,508	120	3,790
150	6,278	220	10,487	340	15,847
250	18,650	370	31,153	570	47,075
350	25,012	520	41,789	800	63,135
450	25,450	670	42,511	1,020	64,238
550	23,134	820	38,643	1,300	58,394
700	30,978	1,040	51,746	1,500	78,193
1,150	44,475	1,720	74,291	2,600	87,738
5,750	33,127	8,580	55,336	13,000	83,618
TOTAL	208,605	TOTAL	348,455	TOTAL	502,028

ROUGH DISTRIBUTION PLAN OF
RESIDENTIAL AND INDUSTRIAL AREA
IN KELANG VALLEY



CONSUMER PRICES OF ENERGY

UNITS: Motor Gasoline, Kerosene, Diesel, Fuel Oil : US Cents/Litre .
LPG: US Cents/kg
Electricity: US Cents/Kilowatt-Hr
Coal: US $/TONNE

PRODUCT	PRESENT (SINCE 1/10/84)	1/5/84	1/2/84	1/1/84	1/9/83	28/7/82	18/4/81	16/8/80	30/8/79
Motor Gasoline:									
Premium	44.2	←	←	←	44.2	45.0	←	42.5	33.8
Regular	41.7	←	←	←	41.7	42.5	←	40.4	30.7
Kerosene	25.8	26.0	←	26.2	19.2	←	←	16.5	11.9
Diesel	24.0	←	24.2	24.4	19.2	←	←	16.5	11.9
LPG	55.8	55.8	←	56.2	55.8	←	62	53.3	42.8
Fuel Oil	20.4								
Electricity									
Residential	9.6								
Commercial:									
Low Voltage	10.4								
High Voltage	7.9								
Industrial:									
Low Voltage	9.6								
High Voltage	7.1								
Coal	64.6								

NOTES: 1. Exchange Rate : US $1 : M$2.40
2. Price of coal is estimated. Coal has been introduced recently, and mainly used for cement production
3. Electricity rates change very infrequently. The most recent change was in 1982

The forms of energy shall cover electric power, LPG supplied in cylinders, kerosene, coal and coal products, charcoal and firewood.

Consumers are expected to be classified as (i) private households, (ii) commercial consumers such as hotels, restaurants and offices, and (iii) medium and small size industries.

(2) Forecast of the growth in energy consumption

The increase in the amount of energy consumed by the classified consumers in the Project Area shall be forecasted for the years during the prediction period.

The forecast shall be based on the growth rate at present as well as its record in the past and the future development plans of the city and the national economy. The consumption growth shall be considered in two aspects; one is the increase in number of the classified consumers which will be caused by the development in the Project Area, the second is the increase in the consumption amount per consumer which will be caused by the economic growth of the society.

In analysing and forecasting the energy consumption, due consideration shall be given to the findings and recommendations of the Energy Master Plan of Malaysia, currently being prepared by the Government of Malaysia.

(3) Estimation of the share of city gas in the total energy consumption

The total amount of energy to be supplied in the form of city gas which is now being supplied in various forms in the Project Area shall be estimated for the years during the prediction period.

The estimation shall be done mainly on the basis of free consumption, where the advantage of city gas is confined to its price and the convenience in usage. However, probable administrative measures, such as a ban of storing cylinders containing LPG inside buildings in view of safety, shall also be considered.
This estimation also requires consideration on the future aspects of the production and import of competitive energies in order to predict their prices and stabilities of supply.

Considering climatic conditions, gas cooling systems for buildings also shall be studied for the Project Area.

(4) Revision of the demand for city gas based on the effect of introducing city gas

The effect of the introduction of city gas itself on the total energy consumption of the classified consumers in the Project Area shall be considered and the estimated demand for city gas for the years during the prediction period shall be revised based on this expectation.

2. Design of the basic structure of the integrated gas distribution system of the natural gas

The F/S team shall recommend the basic structure of the integrated city gas distribution system which shall satisfy the demand for city gas estimated in the abovementioned studies in the most economical way and, at the same time, shall have as much flexibility as possible to adapt themselves to the future development of city gas supply both beyond the prediction period and outside the boundary of the Project Area.

The design of the basic structure shall be composed of the following studies.

(1) Design of the basic route and specification of the gas transmission pipeline

The basic route of the gas transmission pipeline including the crossing points of major rivers and railways to be crossed by the pipeline through tunnels or on bridges shall be designed.

The basic specifications of the pipeline, such as maximum operation pressure, diameter and wall thickness, shall be also designed. These designs shall be conducted on the information obtained from field surveys in the Project Area, and also on the consideration of sufficient and stable supply of gas to the wide-spread consuming points as well as low construction cost, high safety and much flexibility for the future of the pipeline.

(2) Selection of gas distribution system

Basic design of gas supply facilities for distributing gas from the transmission pipeline to the consuming points shall be studied, and the best system in view of economy, safety and stability of gas distribution shall be selected.
Here, basic design of gas distribution system shall include gas delivery pressure to consumers, pressure reducing system, piping materials and equipment at consumer premises such as metering units and safety devices.

In order to determine the most economical, safest and stable gas distribution network, computerized network analysis systems such as NASS and NODES should be applied.

(3) Engineering on other facilities of gas supply system

Necessity for other facilities of gas supply system, such as gas holders for reducing the load on the transmission line, substitional natural gas producing plants, flow measuring facilities, the remote control system of the transmission line and the operation and maintenance centre of the whole supply system, shall be studied.
The study shall be based on the consideration of the overall situation of the area, gas supply and suppliers, demand variation and the probability of emergencies.
For the facilities which have been proved necessary, basic designs such as determining the location and the dimensions of the facilities shall be conducted.

3. Study of the construction process of the city gas distribution system

The total construction cost of a city gas distribution system depends on how it is constructed in relation with the development of the city. In other words, it depends on the extent to which the construction of the system keeps pace with the growth of the city. An extreme case is to apply a city gas system to a completed city, and another is to build it as a part of the planned infrastructure of the city.

The latter is of course more economical, because of the ease of constructing distribution networks and other facilities and the absence of the requirement for reforming or replacement of heating equipment, which is sometimes critical in converting fuels from the conventional to city gas, especially in industrial and commercial fields.

The Project Area does not come under any of these two extreme cases. It is an existing and rapidly growing city area, where the construction cost of the final city gas system will be affected very much by when and where the introduction of the city gas system is to be started. And for obtaining a fully reliable result of the feasibility study, such dynamic approaches in the study of the introduction process is essential.

The general principles to be considered during the study as the basis for evaluating various introduction schedules are as follows.

(1) Total investment for constructing the final distribution system shall be as small as possible. To achieve this aim, for example, new towns and new industries shall be supplied city gas with first priority.

(2) Recovery rate of the investment shall be as high as possible. For example, the system shall be introduced first to the area where the demands for city gas are more densely distributed, then to the areas of less dense demand distribution.

In case that the city gas is expected to give positive economical impacts to some industries, those impacts shall be persued to the maximum degree.

(3) Small size city gas system using LPG as gas source shall be applied to any area where it is practical and expected to contribute to achieving the general principles in the above. Such systems shall be applied as interim city gas systems to the areas to be newly developed before the introduction of natural gas to the Project Area as well as the areas which have a sufficient demand but are not large enough yet to be connected to the main city gas system.

And the study shall comprise the following steps.

(1) Determination of the characteristics of the LPG utilizing city gas system

a) Properties of the LPG-based gas to be supplied. (Ease of conversion to natural gas as well as the manufacturing cost shall be considered.)

b) Minimum and optimum sizes of the system for various types of demands (Case studies on simulation basis for several existing areas are necessary for this purpose.)

(2) Preparation of the outlined schedule of intoducing the city gas system

In this schedule the introduction of both the tentative and the ultimate city gas systems and the conversion from the former to the latter shall be handled.

And it shall also cover the years before the introduction of the natural gas to the Project Area.

(3) Preparation of the outlined schedule of constructing the transmission pipeline and its major auxiliary facilities based on the above introduction schedule of the city gas system.

4. Estimation of the construction cost

The F/S team shall estimate the total cost of constructing gas supply system which comprises transmission pipeline, distribution network and other supply facilities for the years during the project period. The estimation steps are as follows.

(1) Estimation of the quantities of the facilities to be constructed

Preliminary estimation of the quantities of the facilities, such as the length of transmission pipeline, the number of major crossing points, the number of regulator stations, the total length and the average diameter of distribution network and the number and the dimension of other facilities shall be conducted.

(2) Estimation of the unit cost of construction items

The unit price for various construction items of gas supply facilities for the years in the construction period shall be obtained from the studies on the cost of materials to be procured both in and outside of Malaysia,and the cost of land, labor and commodities in Malaysia.

This cost study also requires the engineering component on the basic specifications of major materials and construction works of the gas supply system.

(3) Estimation of the construction cost

Based on the quantitites and the unit cost of the construction items, the amount to be invested on the construction of the gas supply system for the years during the construction period shall be estimated. In addition to the direct cost of actual construction items, the estimates shall include such indirect costs as those for preparation of the final drawings, supervision of construction, protection and maintenance during the construction period, acquisition of land and rights of way.

5. Financial and Economic Analysis

Detailed financial and economic analysis shall be conducted. This shall cover the relevant factors including :

(1) Capital cost covering estimated investment requirements, working capital, annual and replacement cost, engineering licence fee, preliminary and pre-operational expenses, interest charges during construction and contingency.

(2) Financing Scheme.

(3) Profit and loss statement over a period of at least 15 years.

(4) Cash flow statement over the same period

(5) Financial internal rates of return (leveraged and unleveraged).

(5) Sensitivity analysis by changing major variables.

(7) Socio-economic cost benefit analysis of the project covering areas such as foreign exchange earnings/savings, revenue, employment, effect on debt services, etc.

6. Organization and Management Aspects

The F/S Team shall prescribe in detail a management organization responsible for undertaking the project and running the system effectively. For this purpose, the F/S Team shall :

(1) Propose an organizational structure detailing the various divisions, responsibilities/ functions and relationships.

(2) Estimate the manpower requirements with indications of number, educational and skill levels, salaries and wages, and other remunerations for each category.

(3) Estimate the number of foreign personnel required initially together with specific qualifications and experience; and

(4) Propose the training requirements indicating the duration, type and cost of training by category.

7. Evaluation of the result

The F/S team shall evaluate the investment schedule obtained through the abovementioned procedures.

The main point of the evaluation is whether the price of gas based on the estimated amount of investment is competitive enough or not to achieve the sales volumes of gas assumed in the demand forecast. In case the answer is negative, the F/S shall return to Clause 3 and in extreme cases to Clause 2 of this section, and change the conditions which have been assumed in the previous studies and repeat the studies once again.

8. Submission of Report

The F/S Team is required to submit the following reports :

(1) Inception Report (30 copies) containing a detailed statement of the F/S Team's proposed study procedure/methodology and work schedule.

Inception Report shall be submitted not later than thirty (30) days before the date of commencement of the Study.

(2) Interim Report (30 copies) presenting a summary of the works performed during the reporting period, an outline of the works performed during the reporting period and indicating the percentage of completion of the works under each major sub-heading of the Terms of Reference.

Interim Report shall be submitted not later than two hundred and forty (240) days from the date of commencement of the Study.

(3) Draft Final Report (30 copies) summarising all works performed in the study and the findings and recommendations by the F/S Team, including maps, plans and diagrams.

Draft Final Report shall be submitted not later than three hundred (300) days from the date of commencement of the Study.

(4) Final Report (50 copies) suitable for presentation to an international or local institution for the purpose of project financing, incorporating all revisions deemed appropriate by the F/S Team after considering comments by the Steering Committee on the Draft Final Report.

Final Report shall be submitted not later than thirty (30) days from the date of receipt of the Steering Committee's comments on the Draft Final Report.

Duration and Timing of the Study

A preliminary survey team will commence work in June 1985 before the full scale Feasibility Study starts in August 1985. The study will take almost a year to complete with the Final Report expected in August 1986.

Prior to the commencement of the Study, a period of 3 months beginning in March 1985, will be required to prepare the implementation plan.

Consultant Qualification and Experience

The lead project manager would have had at least 15 years experience in utility gas operations.

The rest of the study team, covering surveyors, economists, planners and engineers, etc. must have had at least 5 years experience in the appropriate discipline of gas utility operations including sales engineering, distribution design and engineering, engineering ecoromics etc.

All technical personnel must have at least a Bachelor Degree in their respective discipline.

Data, Material and Local Facilities

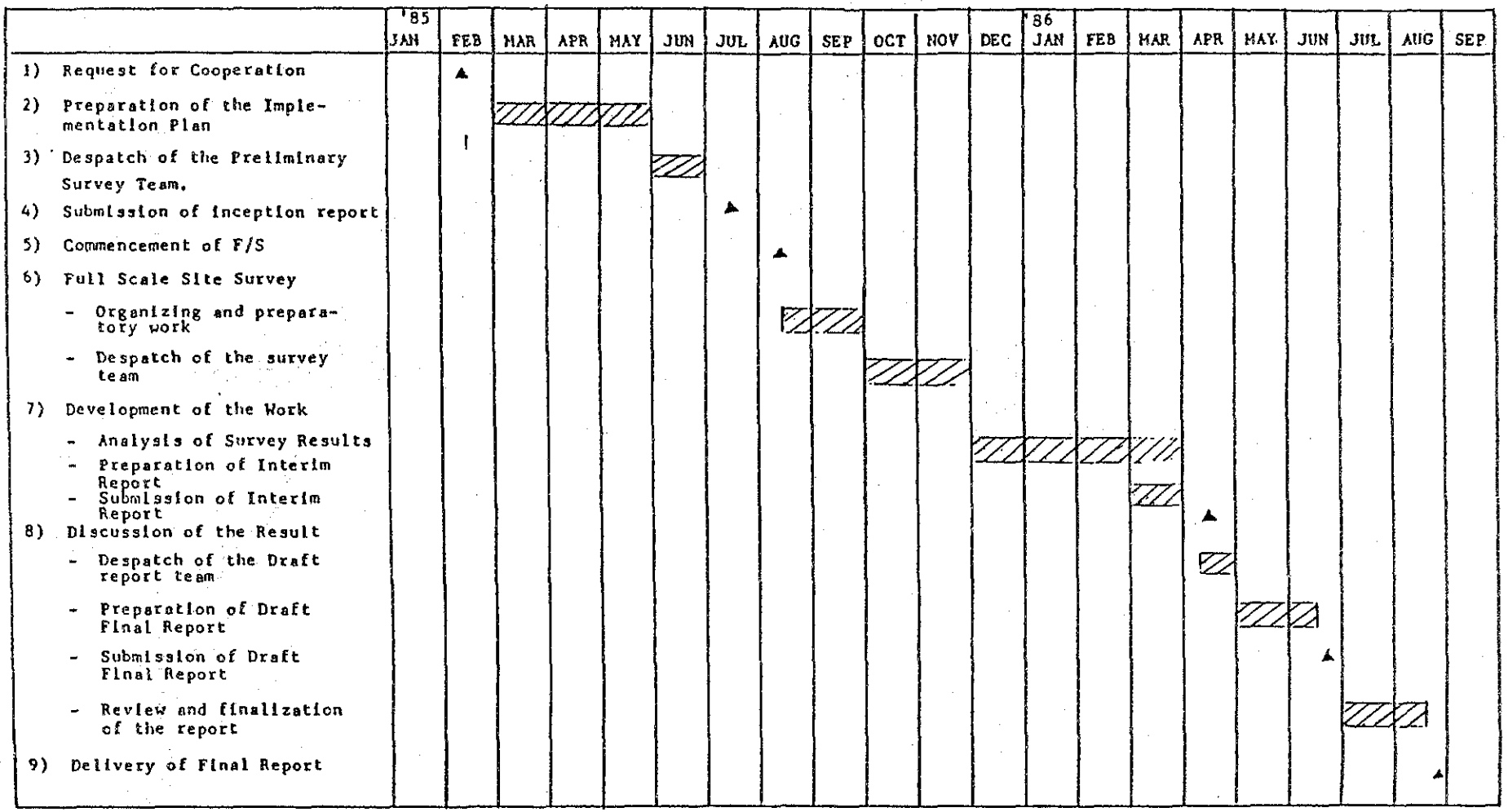
Maps, metereological data, energy statistics, population and demographic statistics and development plans for the Kelang Valley will be provided by PETRONAS. PETRONAS will provide offices for the Japanese Study Team and other Malaysian Government personnel seconded full-time to this Project.

Project Study Coordination/Monitoring

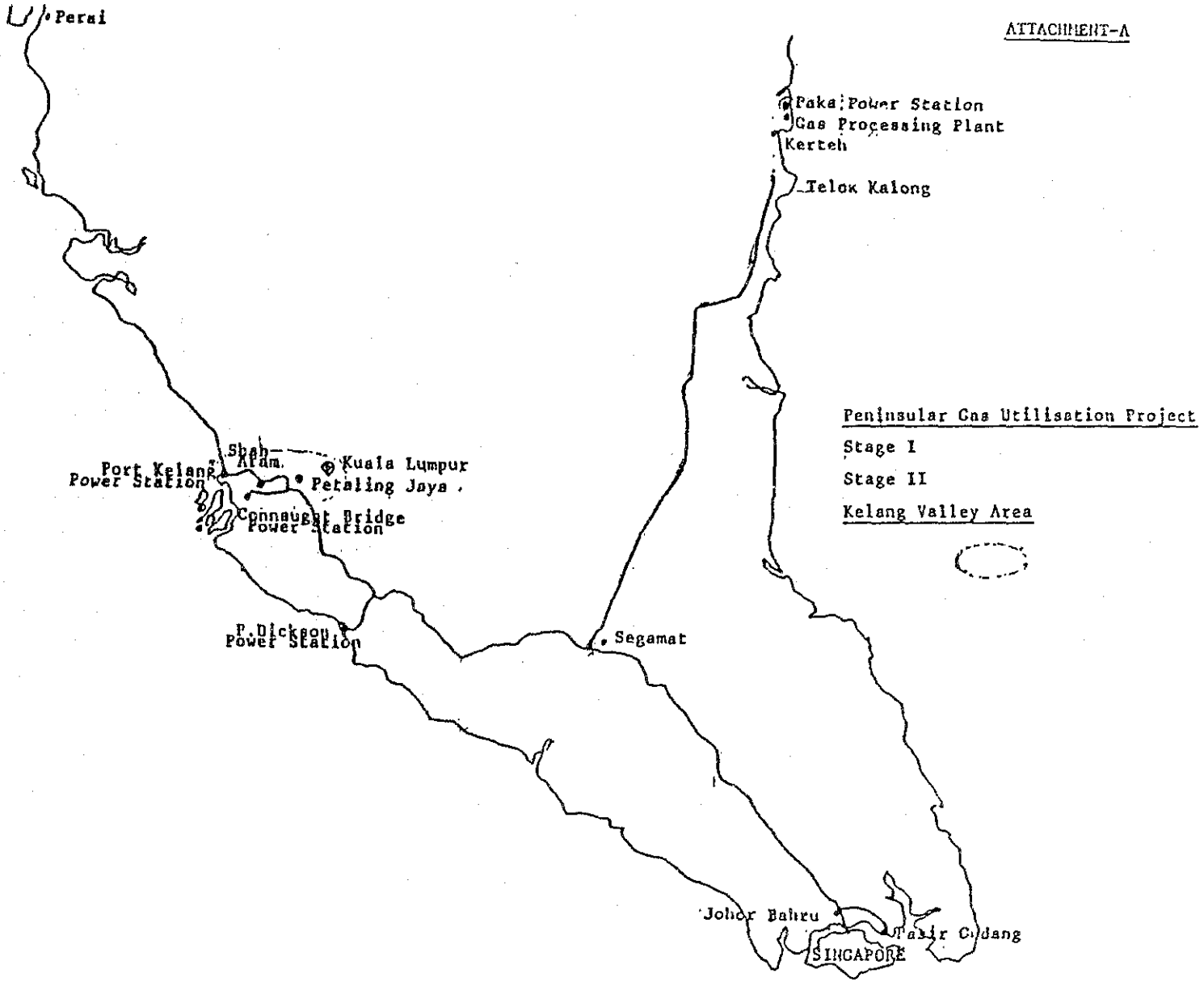
A Steering Committee comprising representatives of relevant Malaysian agencies including PETRONAS, the Economic Planning Unit, Klang Valley Planning Secretariat will be established to coordinate and monitor the progress of the Study on behalf of the Government of Malaysia. A technical committee headed by PETRONAS will also be established to oversee the technical aspects of the Study.

KUALA LUMPUR CITY GAS PROJECT

TENTATIVE SCHEDULE OF F/S (MOST FAVORABLE CASE)



ATTACHMENT-A



5. 質 問 状

QUESTIONNAIRE ON CITY GAS DISTRIBUTION SYSTEMS IN KLANG VALLEY AREA

1. The background and relevant conditions

1.1. Industrialization plan of Malaysia

1.2. Energy policy of Malaysia

1.3. The Peninsular Gas Utilization Project

1.4. Latest information of number of population,households,factories and hotels in Klang Valley area

1.5. Latest information of consumer prices of energy

1.6. The priority of the city gas supply project in the Peninsular Gas Unilization Project

1.7. Relevant oganizations of the project

2. The classified statistics of the energy consumption on different kinds of fuels at present and the forecast in 1990 and 2000 in the planned areas

3. The detail information of the Peninsular natural gas transportation pipeline to Klang such as route,diameter,material,corrosion protection coating,elevation and etc..

4. The locations of the branching point of the city gas supply pipeline from the main gas transportation pipeline to Klang for each area

5. The Laws and Regulations are to be applied for the city gas supply system including the pipelines

6. The soil condition of the pipeline route and the facilities site about the chemical and physical characteristics

7. Is there any idea for the organization and management for the city gas distribution to the area?

8. The technical information on Malaysian products which can be utilizrd for the project

9. The planned targeted calorific value for the city gas

10. The detailed maps of each area to show us the details of the area such as communities, streets avenues, finishing of the road surface, width of the road, etc. including the topographical information, underground water level and the traffic conditions of the area also

11. Answer the Attachment

Attachment

Table.1. The composition of natural gas (Typical data)

		Nor	Max	Min
COMPOSITION Vol %	CH_4			
	C_2H_6			
	C_3H_8			
	$i\text{-}C_4H_{10}$			
	$n\text{-}C_4H_{10}$			
	C_5H_{12}			
	C_6H_{14}			
	CO_2			
	N_2			
	O_2			
	He			
	H_2S			
	Tatal			
Water (g/Nm^3)				
Density (Air=1)				
Heat ($Kcal/Nm^3$)				

Table.2. Condition of natural gas at receiving point in each area

Area name				
Supply pressure (kg/cm^2G)				
Supply quantity (Nm^3/Hr)				
Fluctuation of supply pressure in quantitative				
Fluctuation of supply quantity in quantitative				

Table.3. Condition of LPG cylinders consumption in each area

Area name									
Year	1985			1990			1995		
Quantity (Nm^3)	Max/D	Max/H	Min/H	Max/D	Max/H	Min/H	Max/D	Max/H	Min/H
1.Household									
2.Commerical									
3.Industrial									

Table.4. Numbers of LPG cousumers and gas appliances owned by comsumers in each area

Area name						
Year	1985		1990		1995	
Condition	Numbers	gas appliances	Numbers	gas appliances	Numbers	gas appliances
1.Household						
2.Commerical						
3.Industrial						

Table.5. Consumption(quantity) of other kinds of fuel in each area

Area name				
Year	1985			
Kinds of fuel	Charcoal	Kerosene	Electricity	Others
Household				
Commerical				
Industrial				

Table.6. Possiblity to change to city gas in each area

Area name									
Year	1985			1990			1995		
Number of consumer									
1.Household									
2.Commerical									
3.Industrial									
Quantity (Nm^3)	Max/D	Max/H	Min/H	Max/D	Max/H	Min/H	Max/D	Max/H	Min/H
1.Household									
2.Commerical									
3.Industrial									

6. EPU 回答

UNIT PERANCANG EKONOMI
Economic Planning Unit
JABATAN PERDANA MENTERI
Prime Minister's Department
JALAN DATO' ONN
KUALA LUMPUR 11-01
MALAYSIA

2326675
Telephone: XXXXX
Cable: ECONOMICS
Telex: EPU PM MA 30098

Ruj. Tuan:
Your Ref:

Ruj. Kami: (7)dlm.UPE 21/100/79
Our Ref:

Tarikh:
Date: 24th. January, 1986.

By Hand

Dr. Kenji Tomita,
Leader of the Preliminary Survey Team,
Japan International Cooperation Agency.

Sir,

Re: Feasibility Study On City Gas Distribution System In The Klang Valley Area

With reference to the above Study, I have been directed to submit herewith some of the information you have requested. With respect to the other information, data and maps, we will submit them in due course.

Thank you.

Yours sincerely,

(Raihan Sharif)
on behalf of
Director General,
Economic Planning Unit,
Prime Minister's Department.

Information for the Feasibility Study on City Gas Distributing System in Klang Valley Area are as follows:

1. Petroleum (Safety Measures) Act 1984 - Attachment I

2. Malaysian Standard - Attachment II

3. Total Primary Supply of Energy:
Primary Supply of Energy - Energy Export and Import; Final Use of Energy (in PJ)-Attachment III

4. Consumption of Selected Petroleum Products - Attachment IV

5. Energy Consumption by Sector and Fuel in 1980 (in PJ) - Attachment V

6. Malaysia: Domestic Prices, Taxes and Subsidies of Petroleum Products, 1973-1983 - Attachment VI

7. LPG Consumption, 1978-1982 - Attachment VII

8. National Electricity Board (NEB)
- Power Stations and Capacities - Attachment VIII

9. Organization chart Petronas Dagangan Sdn. Bhd (PDSB) - Attachment IX

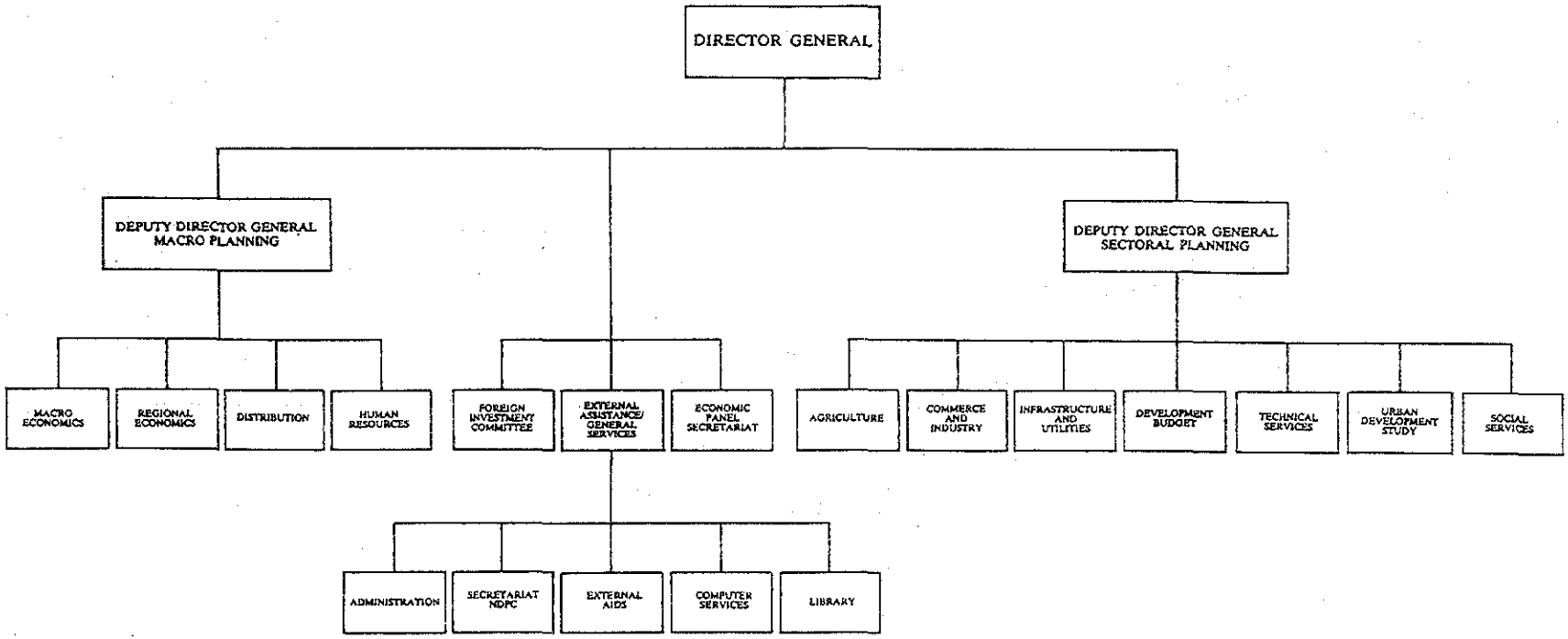
10. Petronas Gas Sdn. Bhd Organisation - Attachment X

11. Peninsular Gas Utilisation Project - Stage II - Attachment XI

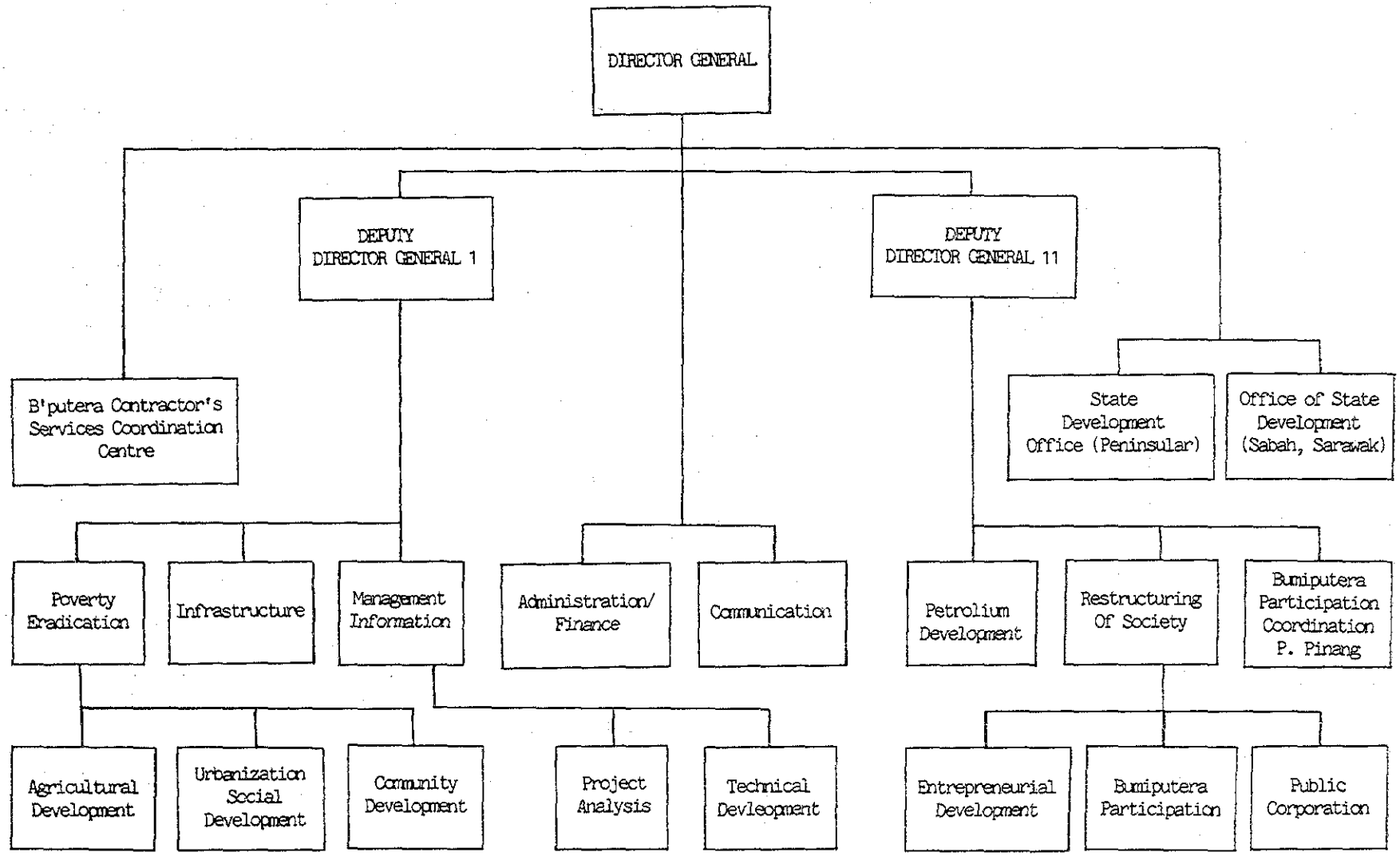
12. Information of Natural Gas Pipeline - Attachment XII

7. 組 織 図

1. Economic Planning Unit



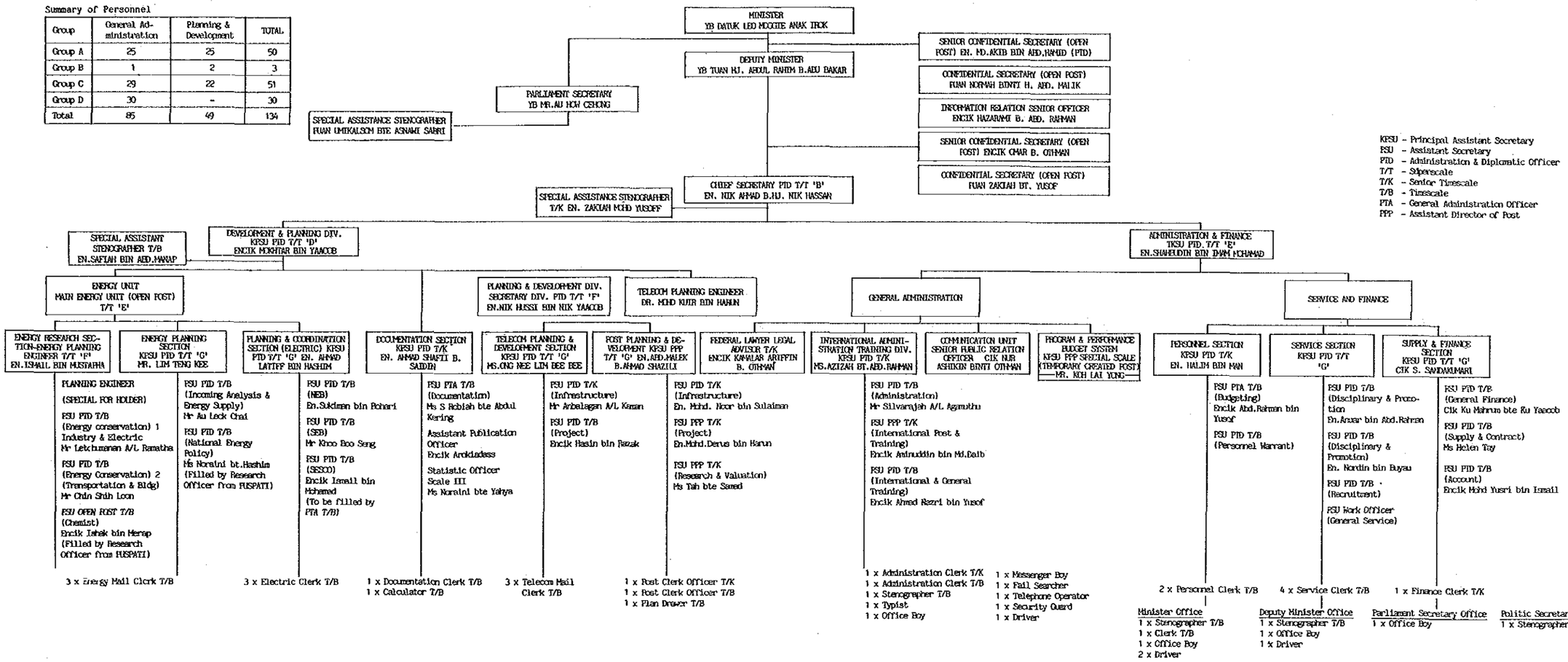
2. ICU (Implementation Coordination Unit)



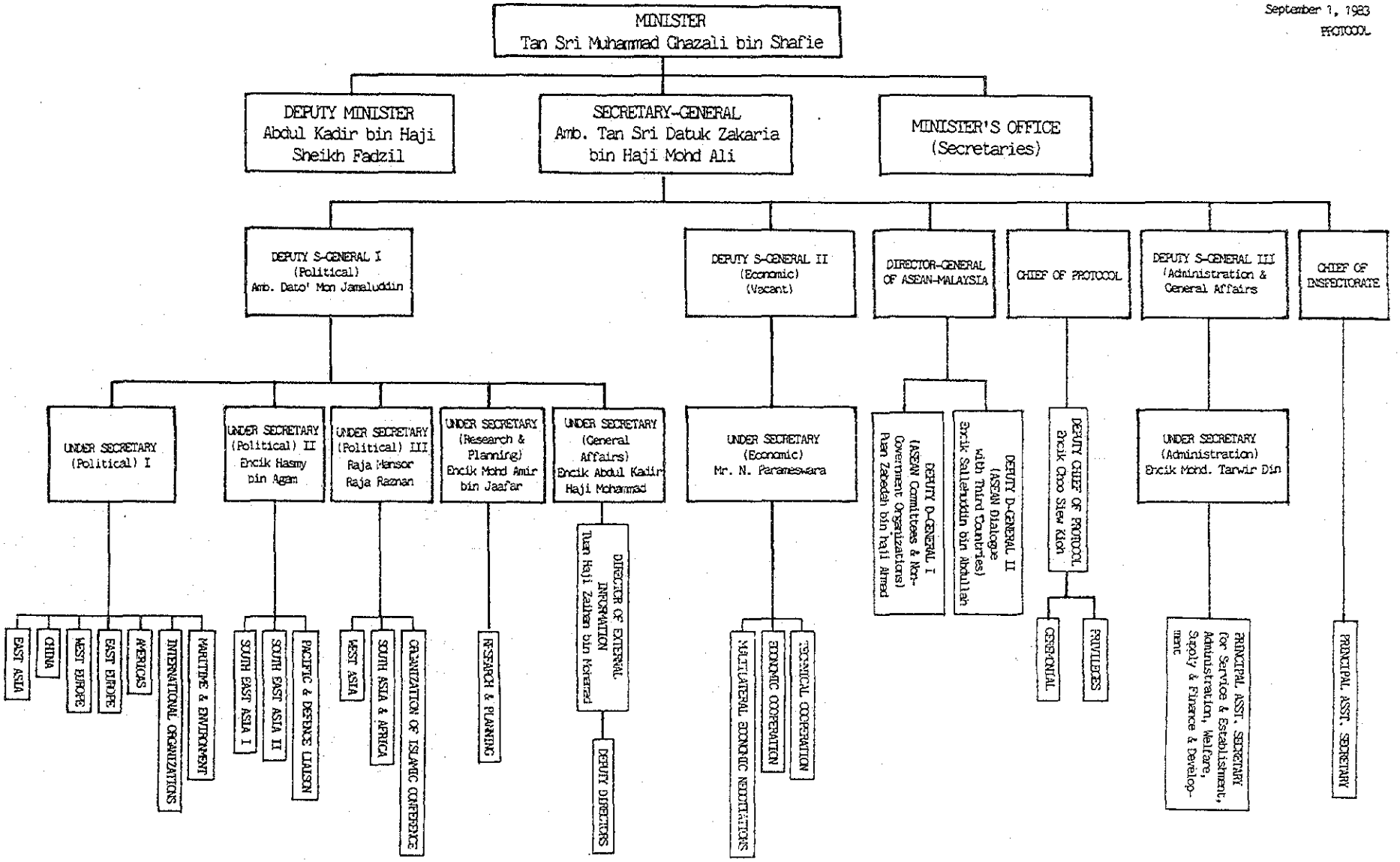
3. Ministry of Energy, Telecommunication & Posts

Summary of Personnel

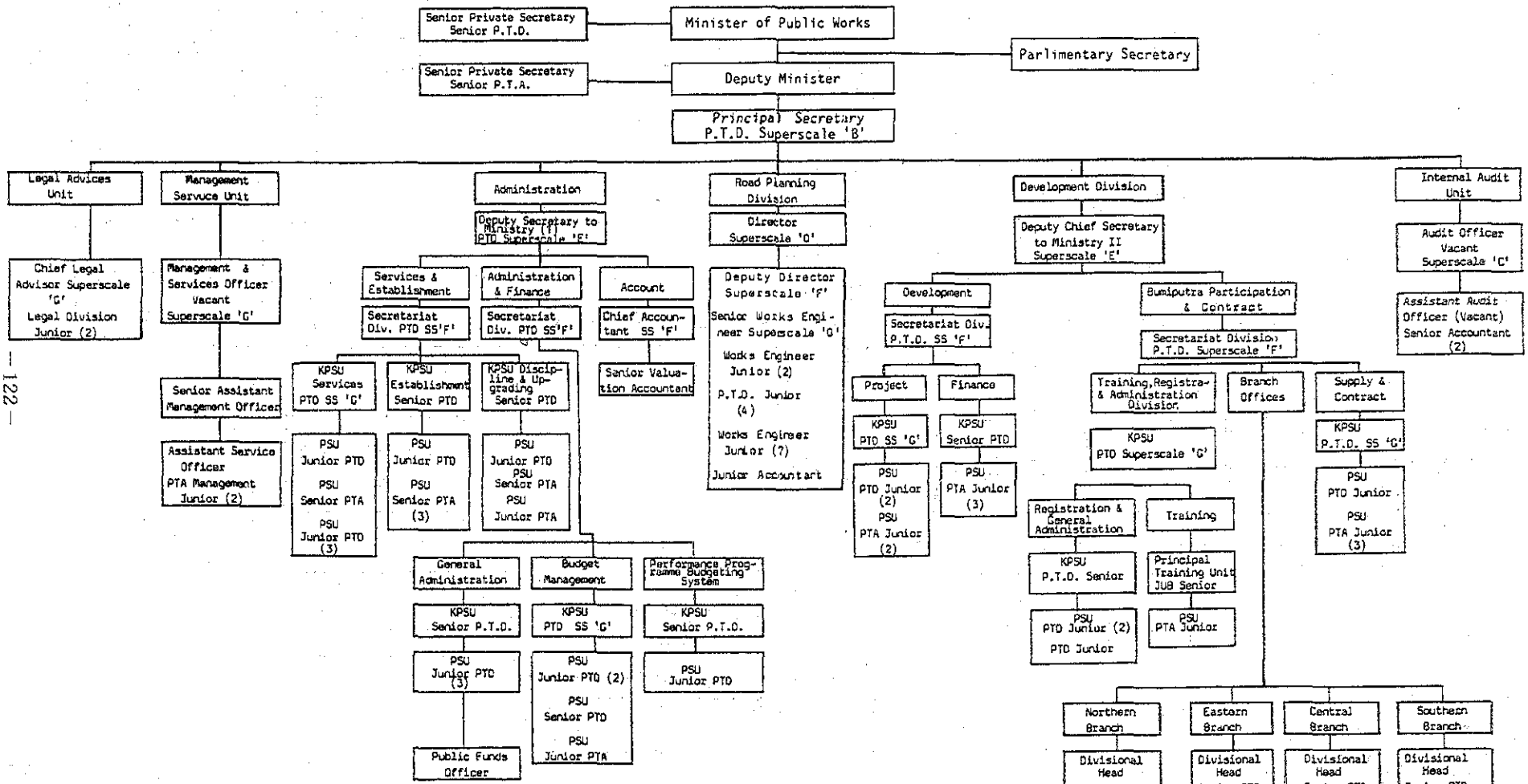
Group	General Administration	Planning & Development	TOTAL
Group A	25	25	50
Group B	1	2	3
Group C	29	22	51
Group D	30	-	30
Total	85	49	134



4. Ministry of Foreign Affairs



5. Ministry of Public Works Department

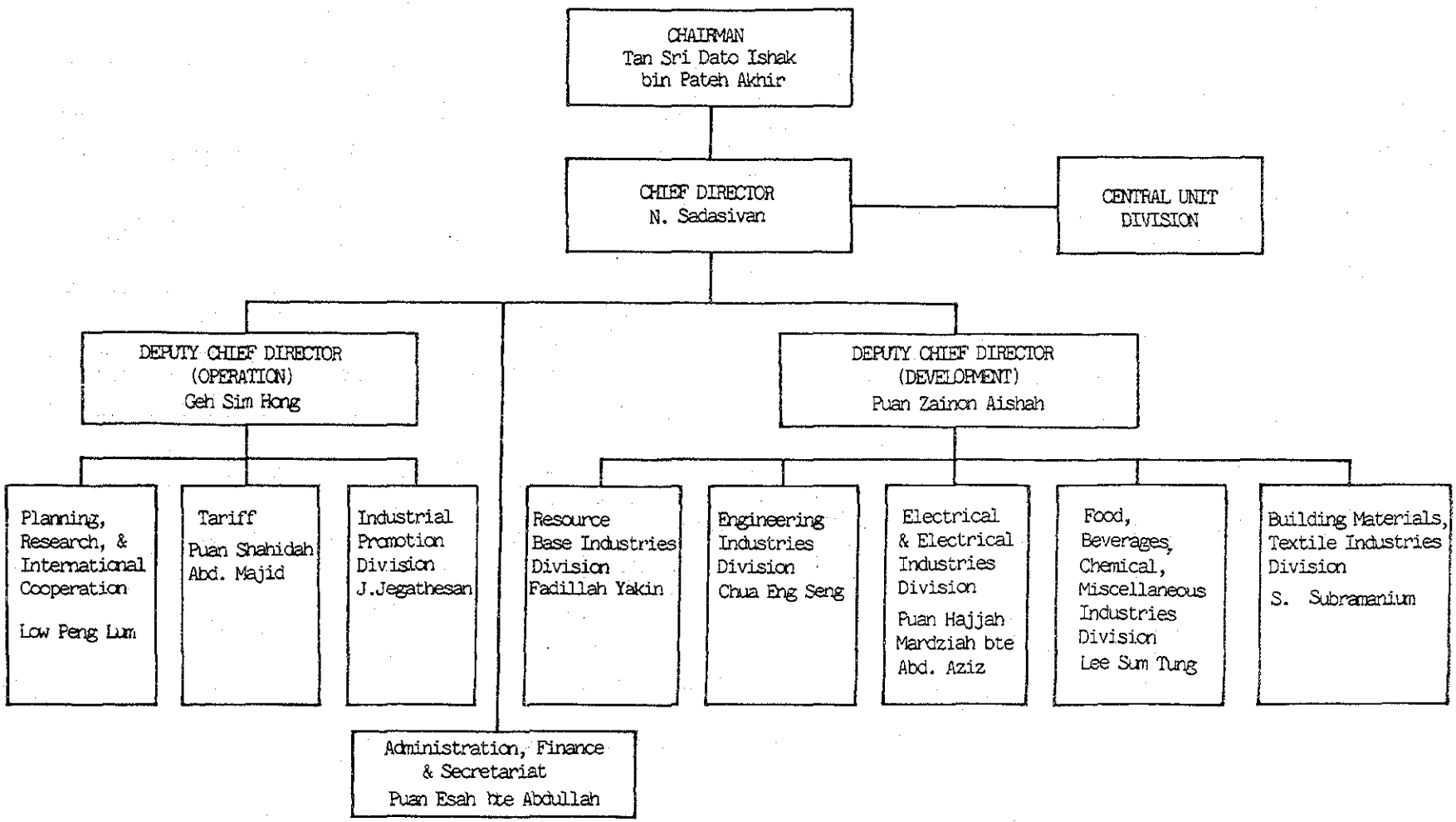


KPSU - Principal Assistant Secretary
PSU - Assistant Secretary
JUS - Quantity Surveyor
SS - Superscale

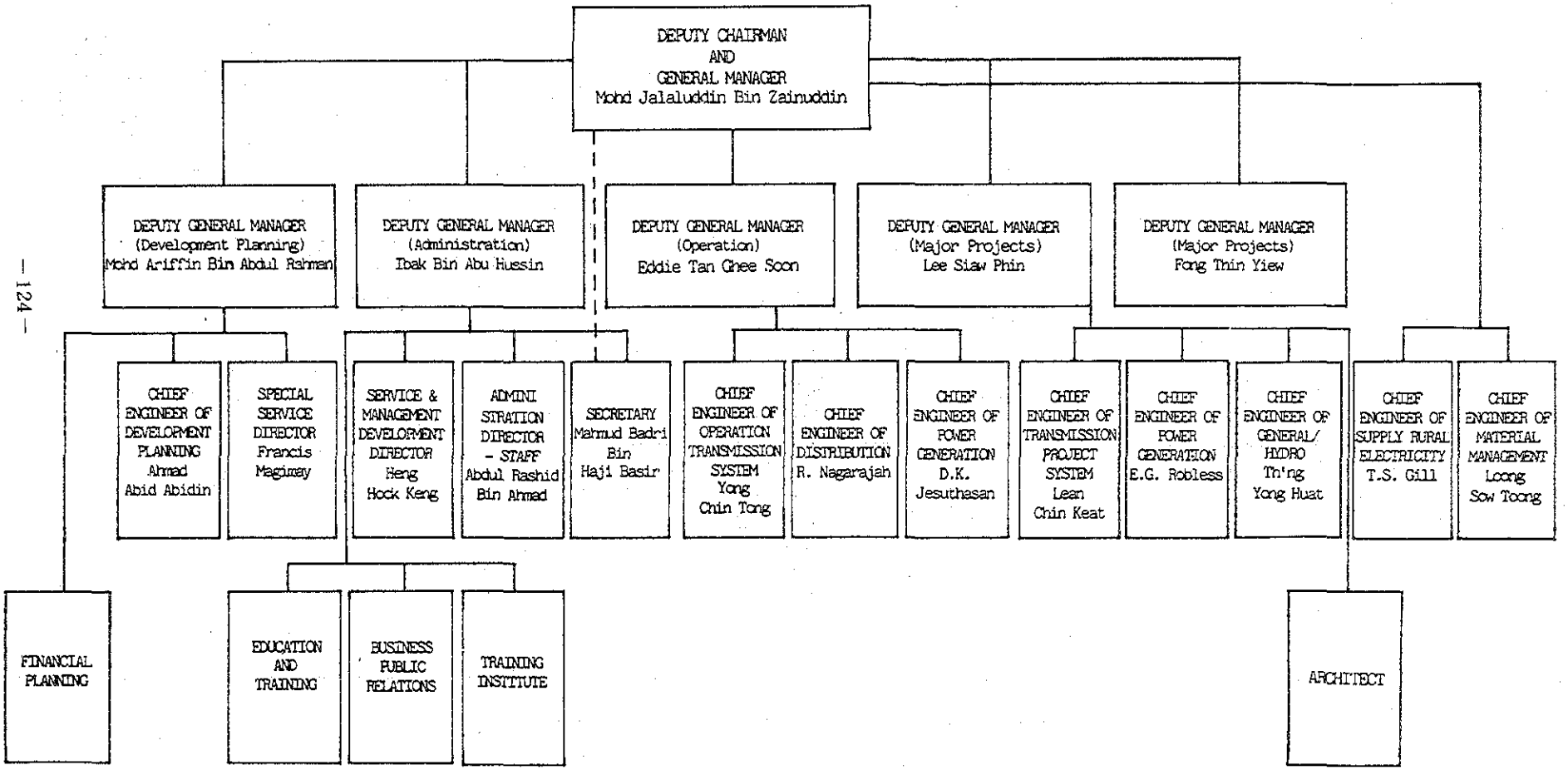
Total No. of Post

PTD - 39 Administration & Diplomatic Officer
PTA - 31 General Administration Officer

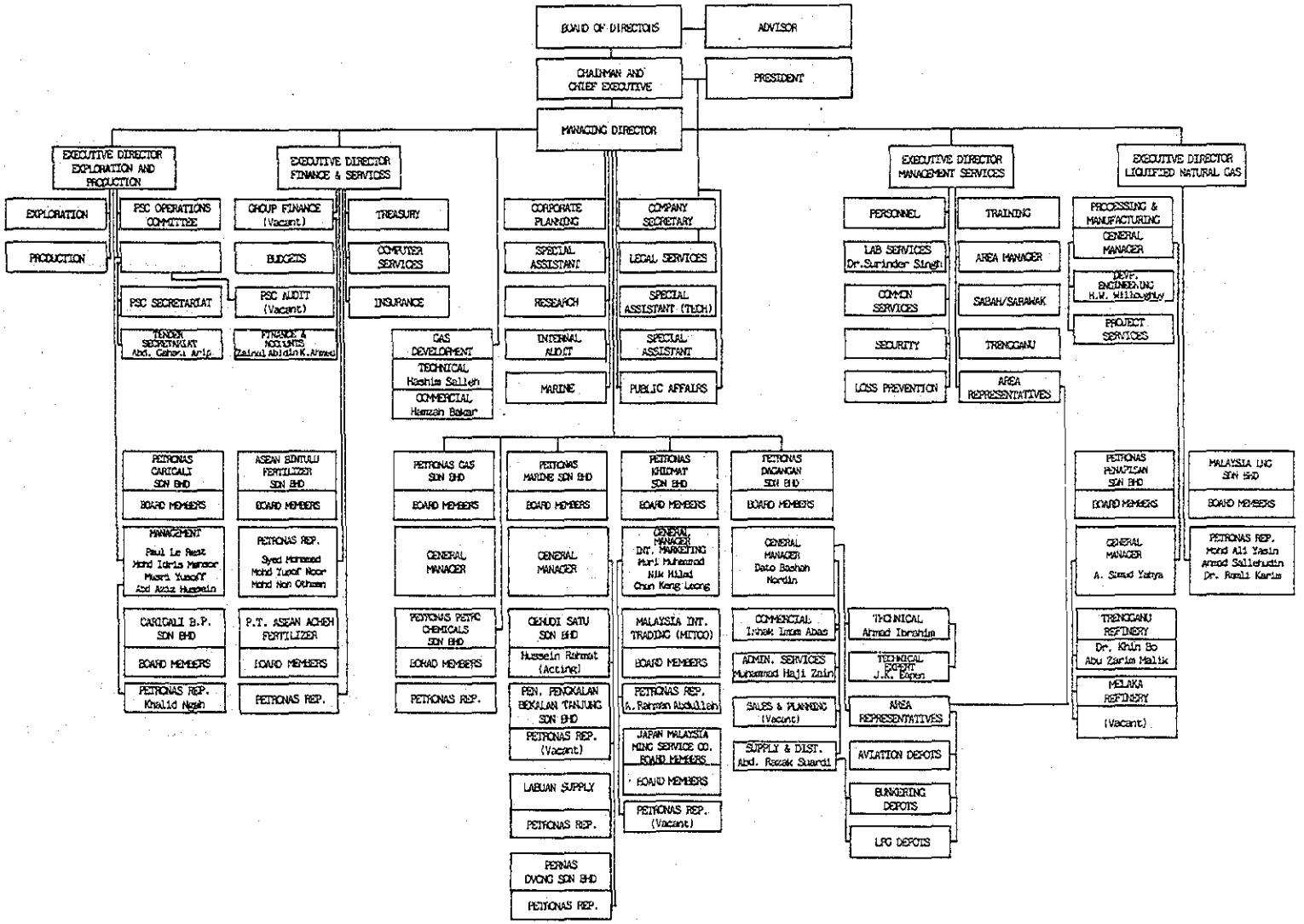
6. MIDA (Malaysian Industrial Development Authority)



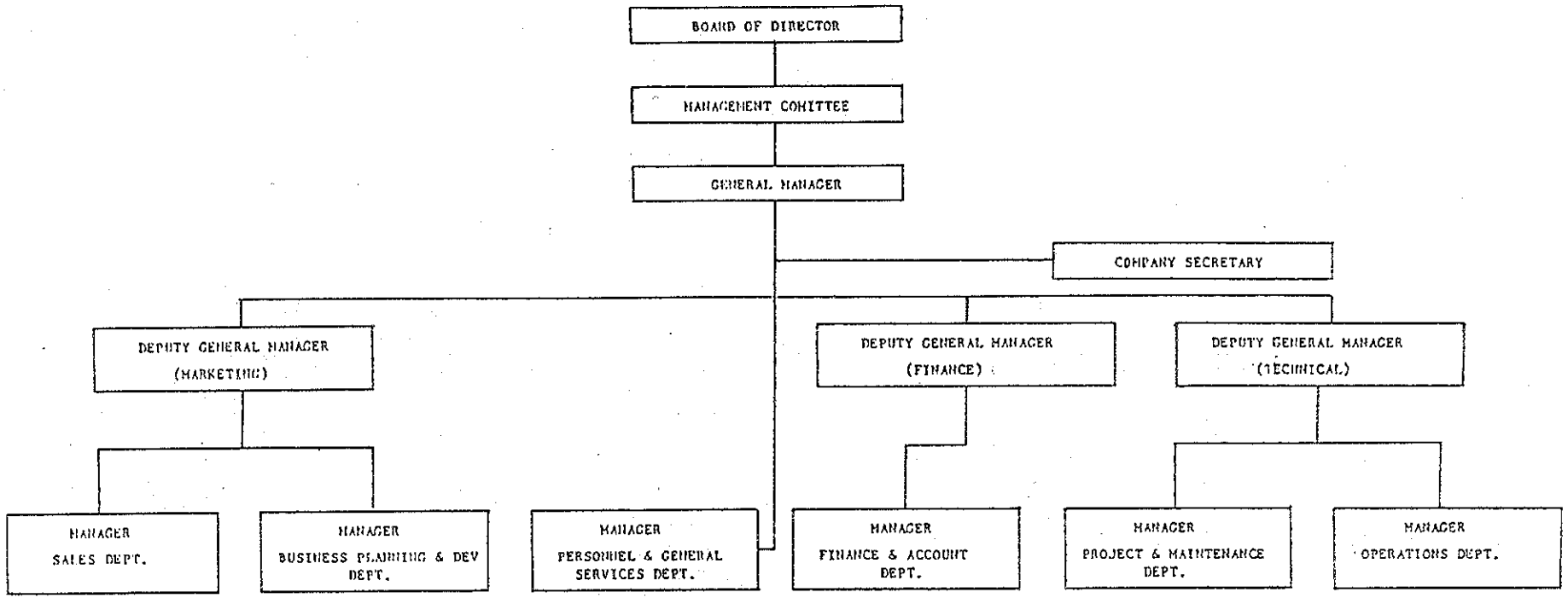
7. National Electricity Board



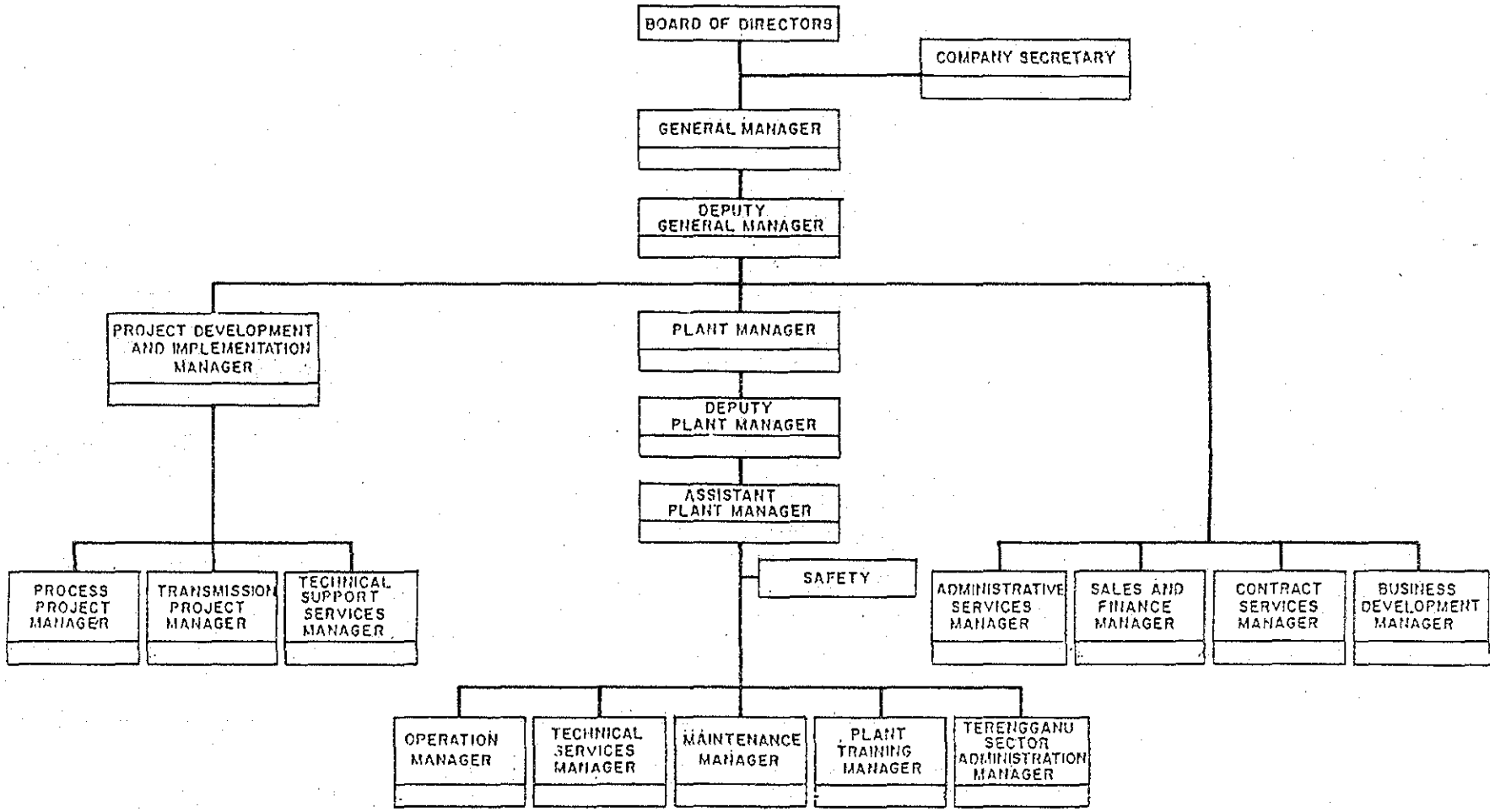
8. Petronas (National Petroleum Corporation)



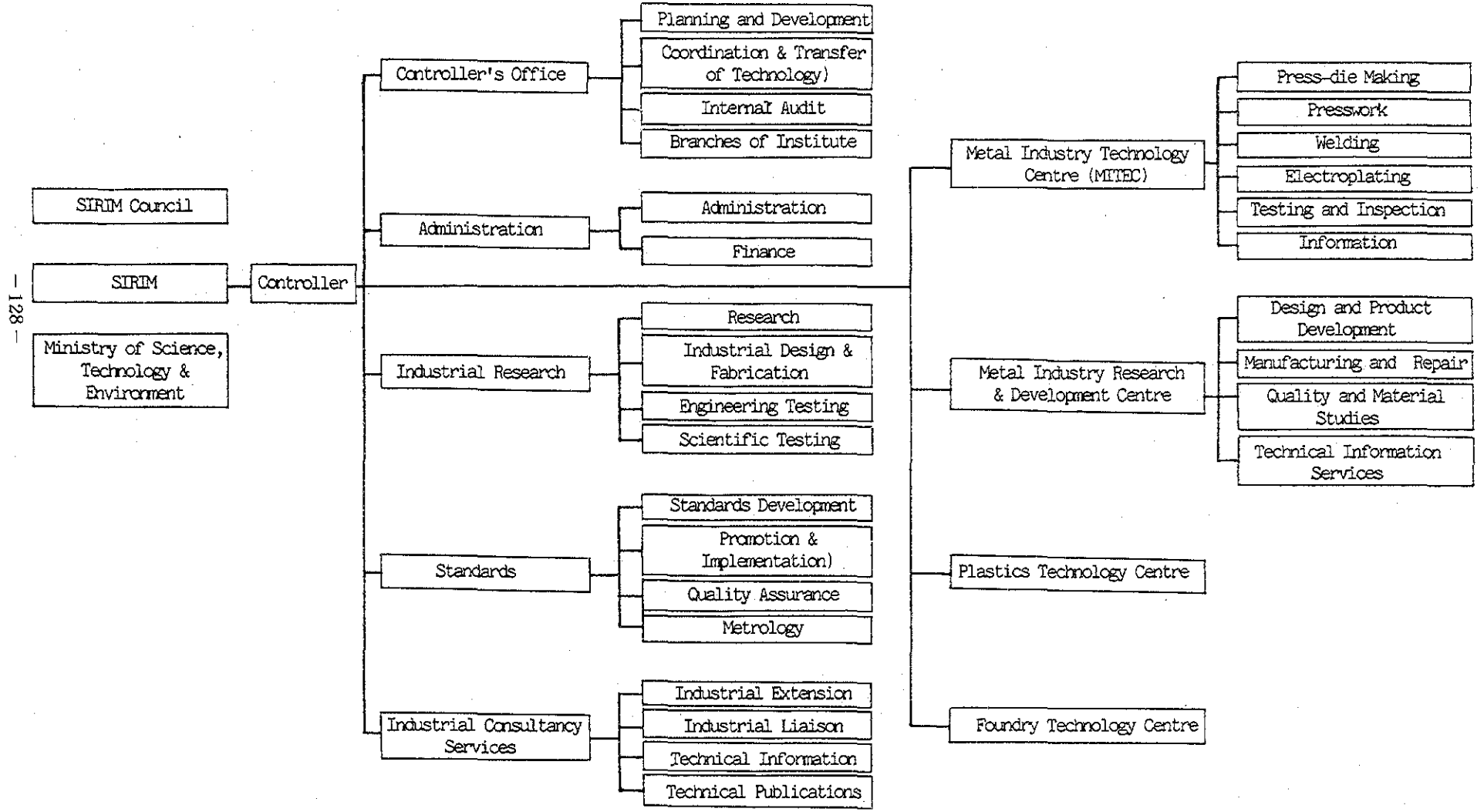
ORGANISATION CHART
PETRONAS DAGANGAN SDN BHD (PDSB)
@ 24/1/86



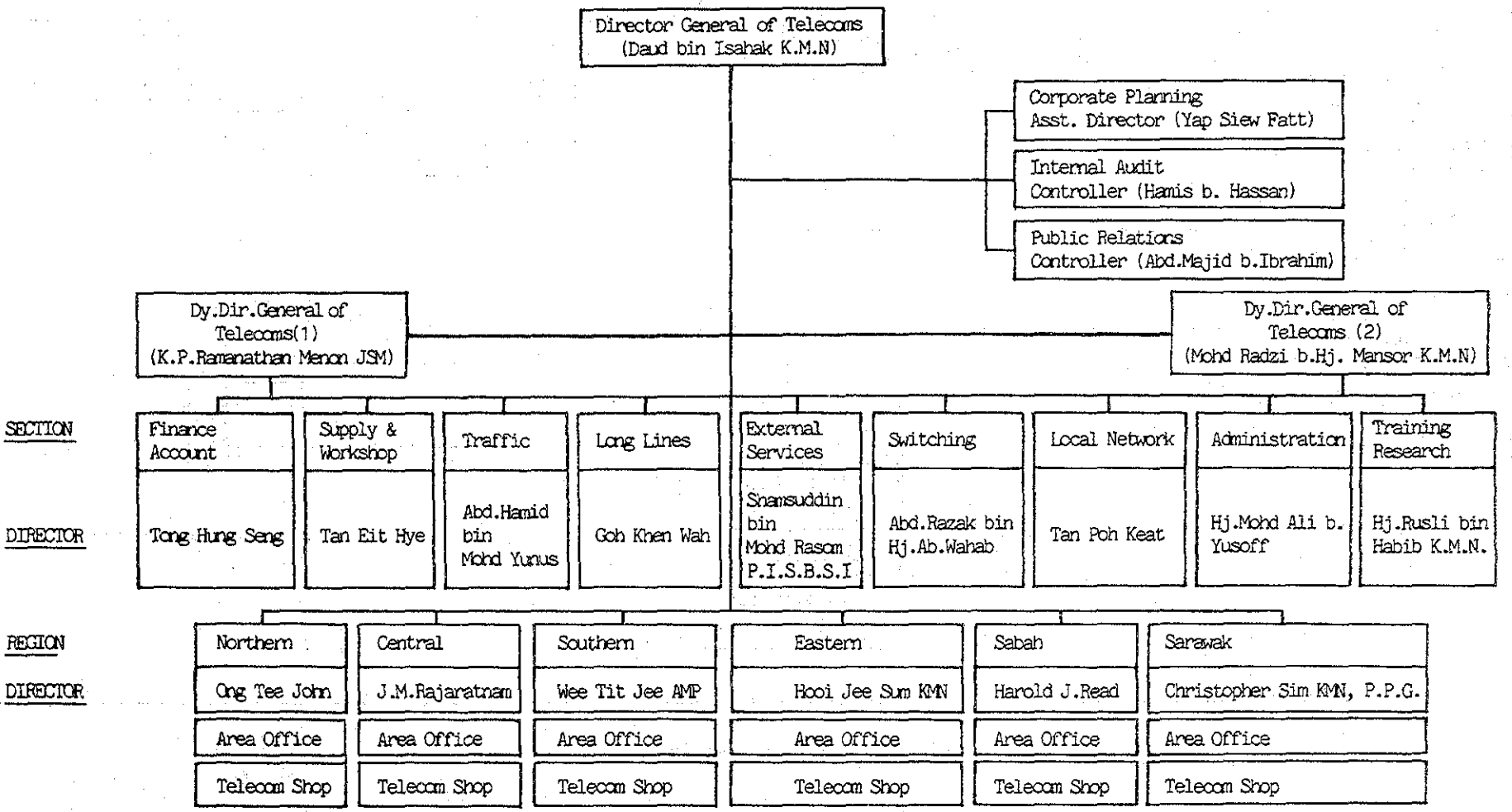
PETRONAS GAS SDN BHD
ORGANISATION STRUCTURE



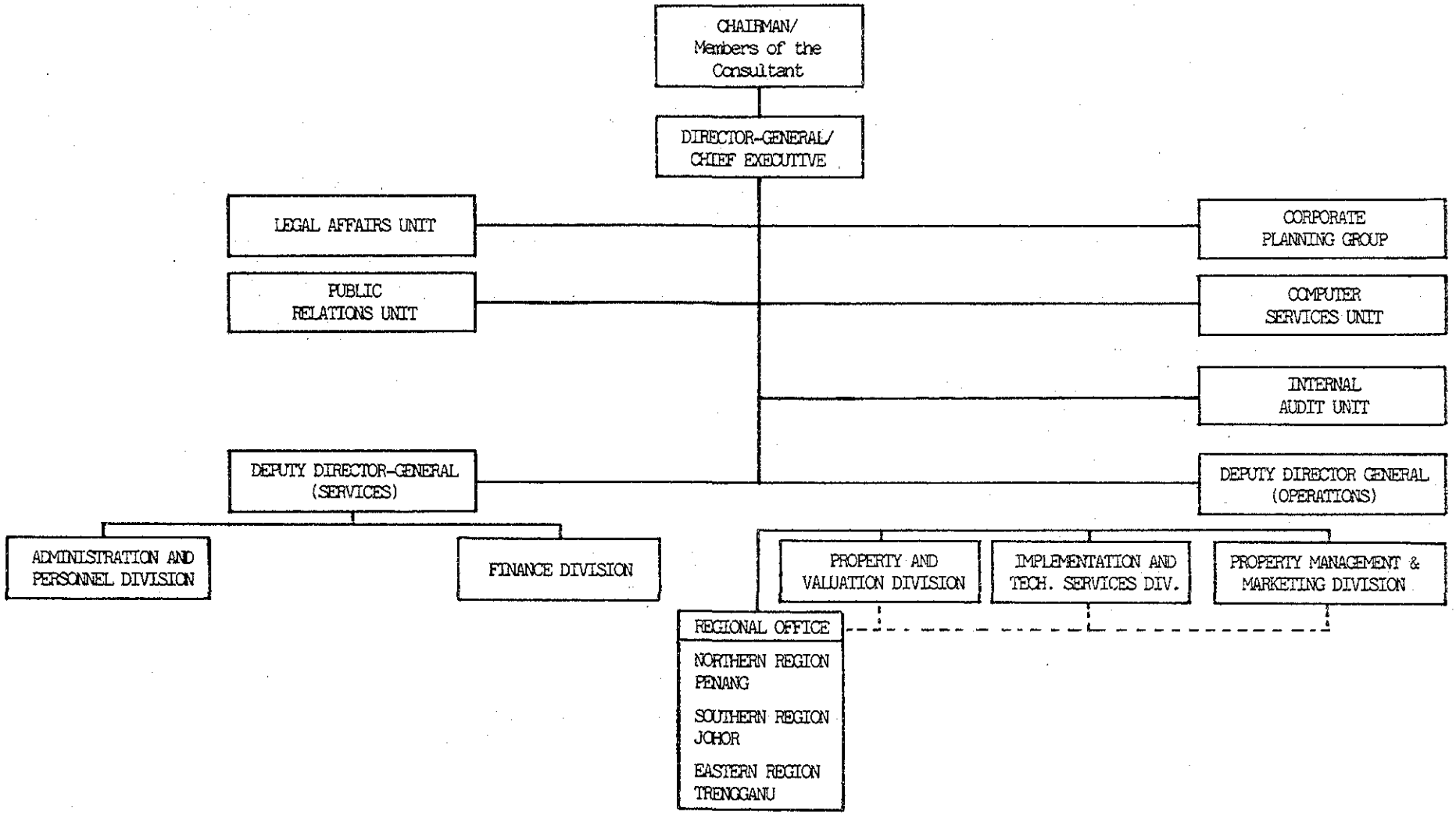
9. SIRIM (Standards & Industrial Research Institude of Malaysia)



10. Telecommunication Department, Malaysia



11. UDA (Urban Development Authority)



8. マレイシア 1985年主な出来事

【一月】

●「バンク・ブミプトラ・マレーシア」(BBMB)は、同行の海外支店と子会社のBMF(ブミプトラ・マレーシア・ファイナンス)の貸し付けを一時凍結することを発表した。

●BBMBは、同行の七つの子会社の経営陣を刷新すると発表した。

●ダイム・ザイヌディン政相は、シンガポールの会社に三〇%の持ち株を認める方針を明らかにした。

●BMF不正融資事件について、ラセイン・オン前首相は、この事件を解明するために政府調査委員会を設けるとともに、バンク・ブミプトラの経営・管理体制を改善し、内外の信用回復を図ることが急務であると強調。

●ケダ州パタニラブ区の下院議員補欠選挙で、与党国民戦線(NF)候補が回教党(PAS)候補を破り当選。

●中国から輸入された華人正月用みかん二万箱が、輸入許可証の問題により、シンガポール税関に差し押えられた。

●住民の反対運動により問題化していたペラク州パハンの放射性廃棄物貯蔵所が、同地から四・八キロ離れた地点に移転されることが決定した。

●サラワク州で、ヤコブ州元首と対のタイプ首席大臣の対立が表面化。

●シンガポール企業の出資規制を緩和、七〇%までの出資比率を認めることを、ラザレ通産相が言明。

●マハティール首相の見守る中、対立を続けてきたMCA二派が和解。

●東京銀行のクアラルンプール支店が強盗に襲撃され、現金約一二二万ドルが強奪された。

【二月】

●ブキ・チャイナ開発をめぐり対立を続けてきた州政府当局と、チンチンテン等信託管理委員会が開発計画で歩みより同意書にサイン。

●投資額五、〇〇〇万ドルを超え、生産品の八〇%を輸出する重工業関係の合弁企業に、外国資本の五十一%株保有を認める予定と、ムヒディン・ヤップ副通産相が発表。

【三月】

●中央銀行バンク・ネガラ新総裁にジャファル・フセイン・マラヤ銀行総裁が就任。

●対中貿易新政策決定のために、政府高官による特別委員会設立。

●ジョホール州議会代表団来星、双方の協力促進を強調。

●サバ州議会が解散。

●マハティール首相がインドネシアを訪問、スハルト大統領と会見し、経済協力促進で意見一致。

●第一〇次円借款(総額一一〇億円)協定書調印。

【四月】

●法定機関および傘下企業に対する政府からの貸し付けのうち、回収不能金は八億五、〇〇〇万ドル。クーマッド・ノールディン国家会計検査院長が発表。

●国産品購買運動スタート。

●輸入タイヤに前税。

●MCA二派合同会議をタン系がボイコット。MCA再び分裂の危機に。

●石油開発法修正案可決、ペトロナスなどの部門に進出。

●PAS大会開催、回教国家建設を確認。

●サバ州議会選挙で与党ベルジャヤ党惨敗、サバ団結党(PBS)第一党に。

●MCAチョン・ホンニャン書記長が辞任。

【五月】

●MCA協時委員会、第一回会議開催。

●ムスタファ統一サバ国民会議(USNO)総裁が、ジョセフ・パイリン・キティガンPBS(サバ団結党)総裁の首席大臣就任の無効を主張して提訴。

●サバ州コタ・キナバルで爆弾事件相次ぐ。

【六月】

●ハリス・サバ州前首席大臣、不正融資リスト公表、与党PBS総裁の名も。

●昨年の貿易黒字額五六億ドルを突破。

●イポーで取り付け騒ぎ、パブリックバンク二支店に数百人の預金者。

●第1四半期半島マレーシア貿易額、輸出七三億九、〇〇〇万ドル、輸入七四億八、〇〇〇万ドルで、黒字は九、〇〇〇万ドルに。

【七月】

●トレンガヌ州から、液化天然ガスが日本へ初出荷。

●マハティール首相、金権政治廃除をUMNO(統一マレー国民組織)党員に呼びかけ。

●国産車「プロトン・サガ」第一号車完成、年間生産予定は七、五〇〇台。

●NEP(新経済政策)延長はせず、二六日総選挙には代替案イムサ・ヒタム副首相。

●国内電話料金二〇年ぶりに引き上げ、国際電話料金も引き下げ。

●外国人の別荘購入を認可。

●解雇取締法違反で起訴されていたオーストラリア人青年二人に有罪判決。

【八月】

●新1四半期の政府財政は、収入が四八億五、六〇〇万ドルと昨年同期の四一億二、八〇〇万ドルから一七・六%(七億九、〇〇〇万ドル)増加、支出は三三億五、七〇〇万ドルと昨年同期の四七億六、七〇〇万ドル(一四億六、七〇〇万ドル)減少、この結果、財政収支は昨年同期の六億二、九〇〇万ドルの赤字から一転、十五億六、六〇〇万ドルの黒字となった。

●マハティール首相は、ネオ・イーパンMCA総裁代行を住宅・地方政府相から解任するとともに、今後MCAの党内抗争が三カ月以内に解決しない場合には、MCAがNFから自動的に脱退することになると発表。

●国産車「プルトン・サガ」の販売価格が発表となった。一三〇〇ccタイプの半島マレーシアの販売価格は一万七、五七四ドル、一五〇〇ccのタイプでは一万九、〇〇五ドル一六セント。

●公共・サービス労働者組合評議会(CUEPACS)と全国労資協議理事会労働五団体が給与問題の話し合い開催について政府に最終申し入れ。

●独立二八周年記念式典開催。

【九月】

●チョン・ホンニャンMCA前総裁が政界引退を発表、MCA役員選挙にも不出馬。

●マレーシア航空は十月に発行予定の七、〇〇〇万株のうち、六、〇〇〇万株を一般に公開することを発表。

●マレーシアの二大労働団体、マレーシア労働組合評議会(MTUC)と公共サービス従業員組合評議会(CUEPACS)が今年末にも合併、マレーシア労働者団体運動組織を結成することを発表。

●ペナン大規開通。

●政府は、輸入促進策の一環として製造業、農業および観光業三部門の新たな投資のために、一〇億ドルの投資基金を設立。

●多民族、汎マレーシア人主義をモットーとする新政党パルティ・ナショナリスト・マレーシア(PNM)が誕生。

【十月】

●広州株式取引所にマレーシアから四八〇社が参加。

●公共・サービス部門従業員組合会議(CUEPACS)と全国労使協議会議(NJCS)メンバー五団体が、全国各地でピケに突入。

●マレーシア汚職取締局は、サバ州のハーマン・ルピン検事総長を一五五万ドルにのぼる収賄容疑で逮捕した。

●イポー高裁は、パパン町住民が起こしていた放射性廃棄物の貯蔵を禁ずる仮処分申請を認める判決を下した。

●一九八六年度予算案発表、予算総額は前年度比六%増の三〇八億一、二〇〇万ドル、経常支出は八五年度比二%増の二一九億五、四〇〇万ドル、開発支出は六%増の八八億五、八〇〇万ドルとなっている。

【十一月】

●労働組合法の組合率を現行の二〇%から二五%に五%引き上げ。実施は来年七月から。

●ケダ州パリンのカンポンで、騎首隊と過激派回教徒が衝突、一八人が死亡。

●MCA(マレーシア華人協会)党大会開催。注目の総裁選では、タン・スークワン前副総裁がネオ・イーパン総裁代行を破り当選。

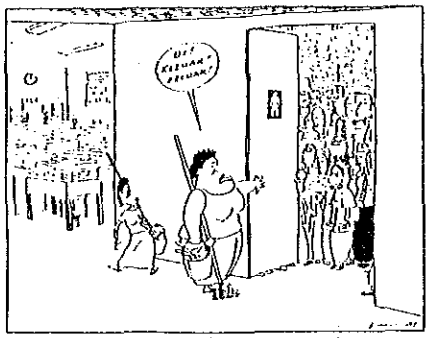
【十二月】

●BMF最終報告書完成。

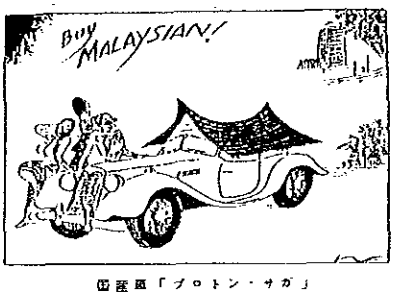
●マハティール首相訪中、直接貿易の開始など経済問題を中心に討議。

●ペナン高裁で、麻薬不法所持の疑いで死刑判決を受けたオーストラリア人男性二人から出されていた上告を最高裁が却下。

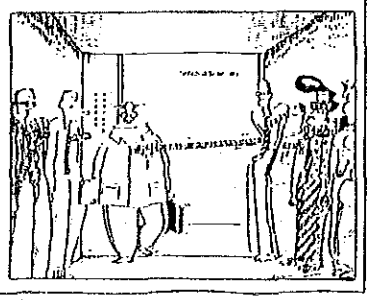
●昨年末におけるシンガポール企業の対マレーシア投資総額は十二億ドル、五七九の企業が進出。



ペナン所持で死刑が確定したニオーストラリア人、バーロートチェンバーズ



国産車「プロトン・サガ」


タンMCA前総裁(左)と握手するネオ前総裁代行

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マレイシア国グランバレー都市ガス供給開発計画
事前調査報告書

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