

APPENDIX 1
TARIFF STRUCTURE OF ELECTRICITY

1.	Tariff A (Domestic)	First 100 units Subsequent 900 units Additional 1 units Minimum monthly charge	\$ 2.50	20 ¢ 23 ¢ 26 ¢
2.	Tariff B (Commercial)	All units Minimum monthly charge	\$ 6.00	24 ¢
3.	Tariff C1 (Commercial)	Maximum Demand per KW All unit Minimum monthly charge	\$ 12.00 \$ 500.00	18 ¢
	Tariff C2 (Commercial)	Maximum Demand per KW within peak All units within peak All units outside peak Minimum monthly charge	\$ 19.00 \$ 500.00	18 ¢ 8 ¢
4.	Tariff D (Industrial)	All units Minimum monthly charge	\$ 6.00	21 ¢
5.	Tariff E1 (Industrial)	Maximum demand per KW All units Minimum monthly charge	\$ 12.00 \$ 500.00	16 ¢
	Tariff E2 (Industrial)	Maximum demand per KW within peak All units within peak All units outside peak Minimum monthly charge	\$ 17.00 \$ 500.00	16 ¢ 8 ¢
	Tariff E3 (Industrial)	Maximum demand per KW within peak All units within peak All units outside peak Minimum monthly charge	\$ 15.00 \$ 500.00	15 ¢ 7 ¢
6.	Tariff F (Mining)	All units Minimum monthly charge	\$ 100.00	19 ¢

Tariff F1	Maximum demand per KW	\$ 12.00	
(Mining)	All units		16 ¢
	Minimum monthly charge	\$ 100.00	
Tariff F2	Maximum demand per KW	\$ 17.00	
(Mining)	within peak		
	All unit within peak		16 ¢
	All unit outside peak		8 ¢
	Minimum monthly charge	\$ 100.00	
7. Tariff G	All units		30 ¢
(Streetlightings)	Minimum monthly charge		

APPENDIX 2

FINANCIAL ANALYSIS ON THE VIABILITY OF EDS FROM TNB's PERSPECTIVE

Assumptions Behind the Cashflows

A. Cash Outflows

- Capital Investment :
 - * Energy Dispensing Meter RM 250.00 each
 - * Additional Dispensing Unit RM 5,200.00 each
 - * Additional System Master Station RM 9,000.00 each
 - * Magnetic cards (to be adsorbed by the local vendors)

- Maintenance Cost :
 - * Energy Dispensing Meter RM 3.75 each per year
(1.5% of the cost)
 - * Dispensing Unit RM 0.10 each per year
(6%/3000 of the cost)
 - * System Master Station RM 0.18 each per year
(6%/3000 of the cost)
 - * Inspection RM 1.50 each per year

- Commission for agency :
 - * Collection center RM 16.20 per customer
(RM 45 x 12 x 3%)
 - * Customer Service Center RM 60.00 per meter
(RM 250 x 12 x 2%)
 - * Dealers RM 30.00 per meter

(RM 250 x 12 x 2%)

* Dealers

RM 30.00 per meter

(RM 250 x 12%)

B. Cash Inflows (Savings)

- Cost of Conventional Meters RM 100.00 each
- Meter reading RM 9.50 per customer
- Billing and Collection RM 8.50 per customer
- Connection/Disconnection Services RM 2.35 per customer
(5% no. of defaulters)
- Bad debts RM 5.40 per customer
(1% on revenue collected)
- Money upfront RM 0.37 per customer
(10% pa for 30 days)
- Escalation in cost assumed at 8% pa for meter reading, billing and collection and connection/disconnection services, due to inflation, etc.
- Collection commission RM 13.50 per customer
- Customer service center RM 60.00 per customer
- Installation cost and after sales service RM 37.50 per meter

C. Discount rate = 12%

	0	1	2	3	4	5	6	7	8	9	10
Savings											
Conventional Meter	100.00										
Meter reading		9.50	10.26	11.08	11.97	12.92	13.96	15.08	16.28	17.58	18.99
Billing and collection		8.50	9.18	9.91	10.71	11.56	12.49	13.49	14.57	15.73	16.99
Connection/Disconnection Services		2.35	2.54	2.74	2.96	3.20	3.45	3.73	4.03	4.35	4.70
Bad debts		5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40	5.40
Money upfront		0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37
Total savings	100.00	26.12	27.75	29.51	31.41	33.46	35.67	38.06	40.65	43.44	46.45
Costs											
Energy Dispensing Meter	250.00										
Maintenance of the system		4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03	4.03
Inspection		1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Total Costs	250.00	5.53	5.53	5.53	5.53	5.53	5.53	5.53	5.53	5.53	5.53
Net Savings	-150.00	20.59	22.22	23.98	25.88	27.93	30.14	32.53	35.12	37.91	40.92
PV of Net Saving	-150.00	18.38	17.71	17.07	16.44	15.85	15.27	14.71	14.18	13.67	13.17616
NPV of Net Saving	6.46										

IRR 13%

TABLE A2.2 CASHFLOW ANALYSIS OF ENERGY DISPENSING SYSTEM FOR TENAGA NASIONAL BERHAD BASED ON SCENARIO 2

[illegible]

APPENDIX 3

CUSTOMER'S SURVEY ON THE FEASIBILITY OF ENERGY DISPENSING SYSTEM IN MALAYSIA

- The survey was carried out in the Klang Valley for a duration of 2 weeks from 2 Feb. 1994 until 18 Feb. 1994. 6 TNB district offices at Kajang, Klang, Shah Alam, Petaling Jaya, K.L. (N) and K.L. (S) participated in this survey.
- The survey questionnaire was accompanied by a covering letter explaining briefly the card metering concept and some of its attributes.
- The sampling was done randomly among the domestic consumers only. The sample size totaled 4094 comprising 2909 questionnaires that were distributed by the meter readers and 1185 questionnaires that were conducted as interviews by clerks at the district offices.

The Analysis of the Survey are as follows :

- Customer Response To The Survey

	Nos. of questionnaires sent out	Nos. of questionnaires received	Response
Postal	2909	379	13 %
Interview	1185	933	79 %
Total	4094	1312	92 %

Inference :

- ⇒ The response through the interview survey was more successful than the postal survey.
- ⇒ The postal survey was not very responsive due to respondents having only 2 weeks to reply.
- ⇒ Though only about one-third of the sample responded, their response is encouraging and reflects the customers' participation in providing comments and feedback on their perception of the new system.

- Customer Response to The Card Metering Concept.

	Agree		Unsure		Disagree		Error		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Postal	233	18	110	8	35	3	1	0.1	379	29
Interview	718	55	135	10	80	6	-	-	933	71
TOTAL	951	73	245	18	115	9	1	0.1	1312	100

Inference :

- ⇒ Majority of the customers, both through the postal and interview survey responded agreeably to the card metering system.
- ⇒ The next big response was from the customers who were unsure of accepting the idea, both through the postal as well as the interview survey. A sample of some of the reasons given for this answer were :
 - i. do not understand how the system works.
 - ii. not clear about the positive and negative aspects of the system.
 - iii. the system seems not suitable for rural customers.
 - iv. there is no model/ pilot project for customers to gauge the performance and effects of the system.
- ⇒ The smallest response both through the postal as well as the interview survey was from the customers who were disagreeable to the idea. Some of the reasons given for disagreeing are :
 - i. profitable to one party only that is to TNB only.
 - ii. TNB's present supply of electricity is reliable and the billing prompt when compared to the other utilities. So why the need for a change?
 - iii. Magnetic cards are not so reliable as presently being experienced by the ATM cards, eg. easily damaged and easily forged.
 - iv. stealing of cards and loss of supply for meters installed outside.
 - v. cash shortage to purchase cards when earlier card is exhausted.

- vi. difficulty in purchasing cards or cards running out of stock in emergencies.
- vii. the need to still queue up to pay the other utility bills like telephone and water bills.

- Customer response as compared to the location of customers.

LOCATION	AGREE		UNSURE		DISAGREE		ERROR	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Kuala Lumpur	250	19	79	6	30	2	-	-
Petaling Jaya	158	12	60	5	29	2	1	0.1
Other areas in Selangor	507	39	97	7	53	4	-	-
Outside S'gor	36	3	9	1	3	0.2	-	-
TOTAL	951	73	245	19	115	0.8	1	0.1

Inference :

⇒ In all locations the majority of customers agreed with the card metering card system.

PREMISE TYPE	AGREE		UNSURE		DISAGREE		ERROR	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
S/terrace	263	20	96	7	27	2	-	-
D/terrace	275	21	56	4	22	2	1	0.1
S/semi D	62	5	9	0.7	9	0.7	-	-
D/semi D	42	3	9	0.7	3	0.2	-	-
S/ bungalow	49	4	5	0.4	6	0.4	-	-
D/ bungalow	23	2	8	0.6	2	0.2	-	-
Shop house	65	5	8	0.6	13	1	-	-
Others	168	13	52	4	29	2	-	-
TOTAL	947	73	243	18	110	8.5	1	0.1

Inference :

⇒ Under others, types of premises included apartments, condominiums, flats, squatters, kampung house, etc.

⇒ All category of premise types agreed with a majority to the card metering idea.

AVERAGE MONTHLY ELECTRICITY BILL	AGREE		UNSURE		DISAGREE		ERROR	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Below RM40	424	32	133	10	59	4.5	-	
RM41-RM100	413	32	86	7	35	2.7	1	0.1
RM101-RM200	78	6	17	1	11	0.8	-	
Above RM200	36	3	8	1	8	0.6	-	
TOTAL	951	73	244	19	113	8.6	1	0.1

Inference :

⇒ Customers from all categories of average monthly electricity bill agreed with a majority.

- Customer response as compared to their profession category.

PROFESSION CATEGORY	AGREE		UNSURE		DISAGREE		ERROR	
	Nos.	%	Nos.	%	Nos.	%	Nos.	%
Govt. sector	220	17	43	3	18	1	-	
Private sector	535	41	135	10	60	5	-	
Own business	146	11	56	4	22	2	-	
Others	47	4	9	1	15	1	1	0.1
TOTAL	948	73	243	18	115	9	1	0.1

Inference :

⇒ Responses under others for the profession category included from pensioners, student, farmer, housewife, etc.

⇒ All category of profession agreed with a majority.

- Customers' choice of features to be included into the card meter.
 - * According to the questionnaire format, this question was only to be answered by customers who agreed with the card metering idea. As such, the data collected on choice of features was analyzed based on the premise that the card metering is acceptable.

Inference :

⇒ The majority chose only 1 feature, followed by 2 features, then 3 features and finally 4 features.

- ⇒ Among the majority who chosen only 1 features, the most favored feature was the alarm beep.
- ⇒ Among those who chose 2 features, the most favored was the alarm beep and credit facility.
- ⇒ Among those who chose 2 features, the most favored was the alarm beep, flashing light and credit facility.
- ⇒ Those who chose 4 features were very negligible.
- ⇒ Under others, some of the features mentioned were :
 - i. ability to provide information for a minimum charge eg. daily consumption
 - ii. provide tariff information
 - iii. cards that do not damage easily.
- Customers' choice of purchase outlets for the 'SMART CARDS'.
 - * This question was also to be only answered by those customers who agreed with the card metering idea. As such, the data collected on choice of purchase outlets was analyzed based on the premise that the card metering is acceptable.

Inference :

- ⇒ The majority chose only 1 purchase outlet, followed by 2 outlets, then 3 outlets and finally 4 outlets.
- ⇒ Among the majority who chose only 1 purchase outlet, the most favored was the 24 hour petrol stations.
- ⇒ Among those who chose 2 outlets, the most favored were the 24 hour petrol stations and the 7-Eleven.
- ⇒ Among those who chose 3 outlets, the most favored were the 24 hour petrol stations, 7-Eleven and Hop-In.
- ⇒ Under others, the outlets chosen were varied and many. Some of the recurring choices were post offices, banks, one-stop payment centers, Kedai TNB, Telekom, etc.

- Customers' consideration upon given reduced rates.

* This question was only posed to the interviewed customers who disagreed with the card metering system.

CONSIDERATION UPON REDUCED RATES	DISAGREE TO CARD METERING	
	Nos.	%
Still Disagree	32	56
Agree Now	7	12
Unsure	16	28
Others	2	4
SUB-TOTAL	57	100
Unanswered	23	-
TOTAL	80	-

Inference :

- ⇒ Out of the 80 customers who disagreed during the interview 32 still disagreed even when reduced rates were offered as an incentive.
- ⇒ Only 7 changed their minds and agreed when reduced rates were offered.
- ⇒ 16 customers were unsure of their response to the reduced rates.
- ⇒ 2 customers did not specify alternatives after choosing the 'Others' option.
- ⇒ 23 customers who disagreed with the idea did not attempt to answer this question. This may be because they did not understand the question and the person conducting the interview did not elaborate.

It is therefore concluded that :

- Agreeable Response To The Card Metering System
 - * The customers who responded to the survey, agreed by a majority of 73% with the card metering system.
 - * Irrespective of locations, type of premise, average monthly electricity bill or profession category the majority of the customers are keen on having this metering.

- * Among those who agreed, the majority chose 3 features favoring alarm beep, flashing light and credit facility.
- * Among those who agreed, though the majority chose 3 outlets favoring 24 hour petrol stations, 7-Eleven and Hop-In, there were many who specified post offices, banks and one-stop payment agencies where they would most probably go to at least once a month.
- Unsure Response To The Card Metering System
 - * The customers who were unsure in their response were mainly those who did not understand the system based on the short explanation on the covering letter of the questionnaire. Probably with better explanations and publicity, this group of customers could be encouraged to agree with the system. Moreover, this group represents the second highest group of respondents.
- Response Disagreeable To The Card Metering System
 - * The customers who disagreed seems to have disagreed based on their perception of the functions of the system and not on monetary issues. This is because, when reduced rates were offered to those who disagreed, only a small number changed their minds and decided to accept the system. The biggest number still maintained that they would disagree to the system.
- Based on the survey findings, the overall response is one of positive acceptance to the card metering system.

METERING FEATURES	AGREEABLE TO CARD METERING AND CHOSE 1 FEATURES	
	NOS.	%
1. ALARM BEEP	297	32
2. FLASHING LIGHT	146	15
3. CREDIT FACILITY	142	15
4. OTHERS	39	4
SUBTOTAL	624	66

METERING FEATURES	AGREEABLE TO CARD METERING AND CHOSE 2 FEATURES	
	NOS.	%
1. ALARM BEEP & FLASHING LIGHT	46	5
2. ALARM BEEP & CREDIT FACILITY	61	6
3. FLASHING LIGHT & CREDIT		

FACILITY	50	5
4. FLASHING LIGHT & OTHERS	4	0.4
5. CREDIT FACILITY & OTHERS	7	0.7
6. ALARM BEEP & OTHERS	3	0.3
SUBTOTAL	171	17.4

METERING FEATURES	AGREEABLE TO CARD METERING AND CHOSE 3 FEATURES	
	NOS.	%
1. ALARM BEEP & FLASHING LIGHT & CREDIT	126	13
2. ALARM BEEP & CREDIT FACILITY & OTHER	4	0.4
3. FLASHING LIGHT & CREDIT FACILITY & OTHERS	4	0.4
4. ALARM BEEP & OTHERS & FLASHING LIGHT	2	0.2
SUBTOTAL	136	14

METERING FEATURES	AGREEABLE TO CARD METERING AND CHOSE 3 FEATURES	
	NOS.	%
1. ALARM BEEP, LIGHT, CREDIT & OTHERS	10	1

	NOS.	%
ERROR	1	0.1
UNANSWERED	11	1
TOTAL	953	99.5

PURCHASE OUTLETS	AGREEABLE TO CARD METERING AND CHOSE 3 FEATURES	
	NOS.	%
1. 24-HOUR PETROL STATIONS	396	42
2. 7-ELEVEN	100	11
3. HOP-IN	14	1
4. OTHERS	109	12
SUBTOTAL	619	68

PURCHASE OUTLETS	AGREEABLE TO CARD METERING AND CHOSE 2 OUTLETS	
	NOS.	%
1. 24-HOUR PETROL STATION & 7- ELEVEN	136	14
2. 24-HOUR PETROL STATIONS &	14	1.5

HOP-IN		
3. 24-HOUR PETROL STATIONS & OTHERS	16	1.7
4. 7-ELEVEN & HOP-IN	7	0.8
5. 7-ELEVEN & OTHERS	6	0.6
6. HOP-IN & OTHERS	0	0
SUBTOTAL	179	18.6

PURCHASE OUTLETS	AGREEABLE TO CARD METERING AND CHOSE 3 OUTLETS	
	NOS.	%
1. 24-HOUR PETROL STATIONS & 7-ELEVEN & HOP-IN	55	6
2. 24-HOUR PETROL STATIONS & 7-ELEVEN & OTHERS	40	4
3. 7-ELEVEN & HOP-IN & OTHERS	0	0
4. 24-HOUR PETROL STATIONS & HOP-IN & OTHERS	0	0
SUBTOTAL	95	10

PURCHASE OUTLETS	AGREEABLE TO CARD METERING AND CHOSE 4 OUTLETS	
	NOS.	%
1. 24-HOUR PETROL STATIONS 7-ELEVEN, HOP-IN & OTHERS	40	4

	NOS.	%
ERROR	1	0.1
UNANSWERED	19	1.4
TOTAL	953	100.1

APPENDIX 4

SURVEY ON THE CUSTOMER'S ACCEPTANCE OF THE ENERGY DISPENSING SYSTEM AT SHAH ALAM'S PILOT PROJECT

- The pilot project started in September 1994 and about 194 customers have been connected with the AEG EDS.
- The objective of this survey is to get the customers feedback on the AEG EDS.
- The survey is based on a simple questionnaire both in Bahasa Malaysia as well as in English. The fieldwork part of the survey was conducted by TNB Shah Alam staff and the method was by personal interviews with the customers.
- This survey will try to cover all the customers that have been connected with the AEG meter. However, problems like 'door-locked' and customers not available in their premises during the survey resulted in 68% coverage.
- A total of 132 respondents have been interviewed. Their locations are as follows:

Seksyen 8,	22 customers
Seksyen 25, Sri Muda	29 customers
Seksyen 9 (Police Qrs.)	42 customers
Seksyen 26 (Kg. Baru Hicom)	5 customers
Seksyen 20 (Police Qrs.)	6 customers
Seksyen 11	22 customers
Seksyen 17	1 customers

Seksyen 18	1 customers
Seksyen 24	2 customers
Seksyen 26	1 customers
Seksyen 27	1 customers

	132 customers

The analysis of the survey are as follows :

- Do you find the card meter easy to use ?

RESPONSE	NOS.	PERCENTAGE %
Yes	131	99.2%
No	1	0.8%
TOTAL	132	100.0%

Inference : Almost all respondents found the card meter easy to use.

- If YES, in what way is the meter easy to use ?

Guided answers (respondents may have more than 1 choice) were chosen as follows :

RESPONSE	NOS.	PERCENTAGE %
A	109	25.2%
B	123	28.3%
C	97	22.5%
D	103	23.8%
Other answers	0	0%
TOTAL	432	99.8%

A - Instructions are easy to understand and follow.

B - Units of electricity available displayed on meter.

C - Useful light indicator available on the meter.

D - The meter shows the rate of my electricity consumption.

If other answers, please specify.

Inference : The customers found the meter easy to use in the following order of choice :

1. Units of electricity available displayed on meter.
2. Instructions are easy to understand and follow.
3. The meter shows the rate of my electricity consumption.
4. Useful light indicators available on the meter.

- If the meter is not easy to use, please specify why

Replies = 0

Inference : Almost all the customers connected with this meter found the meter easy to use.

- What features of the meter do you find useful ?

Guide answers (respondents may have more than 1 choice) were chosen as follows :

RESPONSE	NOS.	PERCENTAGE %
A	122	28.98%
B	125	28.7 %
C	122	28.98%
D	23	5.5 %
E	29	6.9 %
Other answers	0	0 %
TOTAL	421	100.06%

A - The flashing indicator to purchase the next card.

B - The flashing light to indicate the rate of electricity consumption.

C - The display showing the units of electricity available.

D - The color of the meter is pleasing to the eye.

E - The size of the meter is reasonable.

If other answers, please specify.

• Inference : The features that the customers found useful are ranked as following:

1. The flashing light to indicate the rate of electricity consumption.
2. The flashing indicator to purchase the next card.
3. The display showing the units of electricity available.
4. The size of the meter is reasonable.
5. The color of the meter is pleasing to the eye.

- Do you find it easy to load the card into the meter ?

RESPONSE	NOS.	PERCENTAGE %
Yes	98	74.2 %
No	34	25.8 %
TOTAL	132	100.0 %

Inference : About 74% customers found it easy to load the card into the meter while about 26 % customers had some difficulty in loading, the card into the meter.

- If not easy to load, please specify the reasons.

This was a qualitative question. 31 respondents answered and the reason they gave were about the same. The card has to be re-loaded a few times before being accepted by the meter and this frustrated the customer.

Inference : The card needs to be entered at a certain speed to be accepted by the meter. This method seems not to be user friendly as the customers find it difficult to master the technique. Ideally, the meter should be able to accept the card, no matter what the speed of insertion is.

- Do you have any problems in buying the card ?

RESPONSE	NOS.	PERCENTAGE %
Yes	63	47.7%
No	69	52.3%
TOTAL	132	100.0%

Inference : A little more than half the respondents interviewed do not have problems in buying the card.

- If Yes, please indicate the problems

Guided answers (respondents may have more than 1 choice) were chosen as follows :

RESPONSE	NOS.	PERCENTAGE %
A	43	47.8%
B	2	2.2%
C	0	0%
D	44	48.9%
Other answers	1	1.1%
TOTAL	90	100.0%

A - No outlet close to my house selling the cards.

B - Minimum amount (RM10) allowed to buy not low enough.

C - Maximum amount (RM200) allowed to buy not high enough.

D - The outlet selling the card should be open till late at night.

If other answers, please specify.

Answer : 1. Delay in service when buying the card at TNB counter.

Inference : Causes for problems in buying the card are ranked as follows :

1. The outlet selling the card should be open till late at night.
2. No outlet close to my house selling the cards.

3. Minimum amount (RM10) allowed to buy not low enough. (Found to be not a critical problem).

- Is the explanations about the meter usage in the pamphlets/flyers provided sufficient and easy to understand ?

RESPONSE	NOS.	PERCENTAGE %
Yes	127	96.2%
No	5	3.8%
TOTAL	132	100.0%

Inference : Almost all the respondents found the explanations about the meter usage in the pamphlets/flyers provided sufficient and easy to understand.

- During the installation of the meter, was the demonstrations and explanations given by the TNB staff clear and easy to follow ?

RESPONSE	NOS.	PERCENTAGE %
Yes	127	96.2%
No	5	3.8%
TOTAL	132	100.0%

Inference: Almost all the respondents found the demonstration and explanation given by the TNB staff during the installation to be clear and easy to follow.

- What problems do you encounter in using this type of meter ?

Some of the problems mentioned were as follows :

1. No time to buy the card.

2. There is no difference in the savings.
3. It is too far to go and buy the card. What happens if the electricity units have finished late at night ?
4. Problems with inserting the card properly.
5. They need to spend money first.
6. If supply finishes mid-month, there will be no money to buy more units because yet to receive salary.

- Would you like to continue using this meter rather than the conventional meter.

RESPONSE	NOS.	PERCENTAGE %
Yes	127	96.2 %
No	5	3.8 %
TOTAL	132	100.0 %

Inference: About 96% of the respondents interviewed said that they would like to continue using this meter rather than the conventional meter. Only about 4% opposed the idea.

- Would you recommend this meter to your friends and neighbors ?

RESPONSE	NOS.	PERCENTAGE %
Yes	125	94.7 %
No	7	5.3 %
TOTAL	132	100.0 %

Inference: About 95% of the respondents interviewed said that they would recommend this meter to their friends and neighbors.

This information can be used to market the meter in future by offering incentives to the customers who bring in more customers willing to use this type of meter.

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This information can be used to market the meter in future by offering, incentives to the customers who bring in more customers willing to use this type of meter.

- Have you any further comments about this meter and the card used ?
 1. The card system would be more preferable if the rate is fixed at the current 20 sen rate.
 2. Customers can monitor their electricity consumption and this helps in budgeting.
 3. Other means of using this meter other than the card should be provided.
 4. The card should be more durable, better quality and also made more attractive.
 5. Suitable for rented premises and where the occupants are not in during the daytime.
 6. The conventional system is simpler and the customer need not spend first to get his electricity.

QUESTIONNAIRE ON THE AEG ENERGY DISPENSING SYSTEM

SOAL SELIDIK BERKENAAN JANGKA AEG ELFA SISTEM 'PREPAYMENT'

1. Name of Consumer/ *Nama Pengguna* :

2. Address/ *Alamat rumah* :

3. AEG Meter No./ *No. Jangka AEG*

4. Date of Installation / *Tarikh Pemasangan Jangka AEG* :

5. Consumer Account No. / *No. Akaun Pengguna* :

(Please circle or tick ✓ the answer chosen where applicable)

(Sila bulatkan atau tandakan ✓ jawapan yang dipilih dimana berkenaan)

1. Do you find the card meter easy to use ? YES or NO

Adakah jangka kad ini senang diguna ? YA atau TIDAK

2a. If YES, in what way is the meter easy to use ?

Jika YA, bagaimanakah jangka ini senang diguna ?

A Instruction are easy to understand and follow.

Arahan ialah senang untuk difahami dan membuatnya.

- B Units of electricity available displayed on meter.
Unit elektrik untuk kegunaan dipamerkan atas jangka.
- C Useful light indicators available on the meter.
Petunjuk-petunjuk lampu yang sesuai ada di atas jangka.
- D The meter shows the rate of my electricity consumption
Jangka menunjukkan kadar penggunaan elektrik saya.

If other answers, please specify,

Jika jawapan lain, sila huraikan

- 2b. If the meter is not easy to use, please specify why.

Jika jangka ini tidak senang untuk digunakan, sila huraikan.

3. What features of the meter do you find useful ?

Apakah ciri-ciri jangka ini yang berguna kepada anda ?

- A The flashing indicator to purchase the next card.
Lampu isyarat untuk membeli kad lagi.
- B The flashing light to indicate the rate of electricity consumption.
Lampu isyarat untuk menunjukkan kadar penggunaan elektrik.
- C The display showing the units of electricity available.
Unit elektrik yang ada untuk kegunaan dipamerkan.
- D The colour of the meter is pleasing to the eye.
Warna jangka adalah senang untuk dipandang.
- E The size of the meter is reasonable.
Saiz jangka adalah sesuai.

If other answers, please specify,
Jika jawapan lain, sila huraikan,

4a) Do you find it easy to load the card into the meter ? YES or NO
Adakah senang untuk anda memasuki kad kedalam jangka ? YA atau TIDAK

4b) If NO, please specify the reasons.
Jika TIDAK, sila huraikan sebab-sebabnya.

5a) Do you have any problems in buying the card ? YES or NO
Adakah anda mengalami kesulitan membeli kad ? YA atau TIDAK

5b) If YES, please indicate the problems
Jika YA, sila tandakan masalah berkenaan.

- A No outlets close to my house selling the cards.
Tidak ada tempat berhampiran rumah saya yang menjual kad ini.
- B Minimum amount (RM10) allowed to buy not low enough.
Jumlah minimum (RM10) yang boleh dibeli tidak cukup rendah.
- C Maximum amount (RM200) allowed to buy not high enough.
Jumlah maksima (RM200) yang boleh di beli tidak mencukupi.
- D The outlet selling the card should be open till late at night.
Tempat yang menjual kad itu perlu dibuka hingga larut malam.

If other answer, please specify,
Jika jawapan lain, sila huraikan,

-
-
- 6a) Is the explanations about the meter usage in the pamphlets/flyers provided sufficient and easy to understand ? YES or NO

Adakah penjelasan berkenaan pengguna jangka dalam risalah-risalah yang diberi, mencukupi dan senang untuk difahami ? YA atau TIDAK

- 6b) If NO, please specify the reasons.

Jika TIDAK, sila huraikan sebab-sebabnya.

- 7a) During the installation of the meter, was the demonstration and explanations given by the TNB staff clear and easy to follow ? YES or NO

Semasa pemasangan jangka ini, adakah demonstrasi dan penjelasan diberi oleh kakitangan TNB senang difahami ? YA atau TIDAK

- 7b) If NO, please specify the reasons.

Jika TIDAK, sila huraikan sebab-sebabnya.

8. What problems do you encounter in using this type of meter ?

Apakah masalah yang anda mengalami dalam menggunakan jangka jenis ini ?

9. Would you like to continue using this meter rather than the conventional meter ?
YES or NO

*Adakah anda suka meneruskan pemakaian jangka jenis ini dibandingkan dengan
• jangka jenis konvensional ?*

YA atau TIDAK

10. Would you recommed this meter to your friends and neighbors ? YES or NO

Adakah anda akan merekomenkan jangka ini kepada rakan dan saudar anda ?

YA atau TIDAK

11. Have you any further comments about this meter and the card used ?

Adakah apa-apa komen berkenaan jangka ini dan kad yang digunakan ini ?

Date / Tarikh :

Interviewer / Nama Penemuramah :

APPENDIX 5

BACKGROUND OF ELEKTROKAD SDN. BHD.

A 5.1 Introduction

Elektrokad Sdn. Bhd. was incorporated in 1994 with the equity structure of 51% : 34% : 15% between three companies namely KUB Holdings Bhd., Progressive Impact Corporation Sdn. Bhd., and Dimentika Sdn. Bhd. respectively. KUB Holdings Bhd. is an investment arm of Koperasi Usaha Bersatu (KUB) and its primary activities include property development, information technology, academic institutions, hotels management, and oil and gas. Progressive Impact Corporation Sdn. Bhd. (PIC) is a private limited company incorporated in Malaysia and its primary activities include information technology, aquaculture, civil contracting, and control systems. Dimentika Sdn. Bhd. (Dimentika) is a private limited company incorporated in Malaysia and its primary activities include investment in property, contracting, and energy-related development.

Dimentika was accorded a sole distributorship for AEG Energy Dispensing System (EDS) in Malaysia in the early 1994 and subsequently has carried out feasibility study on the prospect of such system in Malaysia. Realizing the mammoth task of undertaking successfully the EDS in Malaysia, Dimentika has decided to team up with few relevant companies to ensure financial, technical as well as political strength being enhanced. The memorandum of understanding follows by shareholder's agreement was made in August 1994 between the three parties outlining their scope of involvement in this project. In

September 1994, TNB awarded the EDS pilot project in Shah Alam to the Consortium which is now operating under the company, Elektrokad Sdn. Bhd. Elektrokad Sdn. Bhd. is established with only one objective that is to harness the potential of EDS in Malaysia to the fullest. As such, the company will embark on various strategies to ensure the objective is being met.

A 5.2 Ownership

As explained earlier, Elektrokad Sdn. Bhd. is owned 51 % by KUB Holdings Bhd. (KUBH), 34 % by Progressive Impact Corporation Sdn. Bhd. (PIC), and 15 % by Dimentika Sdn. Bhd. (Dimentika). The initial authorized capital is RM 1.0 million while the paid-up capital at the point of incorporation stands at RM 0.5 million. After weeks of negotiation among the three parties, it has been agreed that :

- The Chairmanship of the Company be retained by KUBH
- KUBH is allowed to appoint 3 directors (including the Chairman) to the Company while PIC and Dimentika 2 directors each.
- The Managing Director of the Company shall be appointed from among the directors of the Company.
- The other two parties which were not appointed as the Managing Director are allowed to appoint one Executive Director each to the Company.
- The amount of contribution and liabilities will be based on proportion of equity allocated to each party.

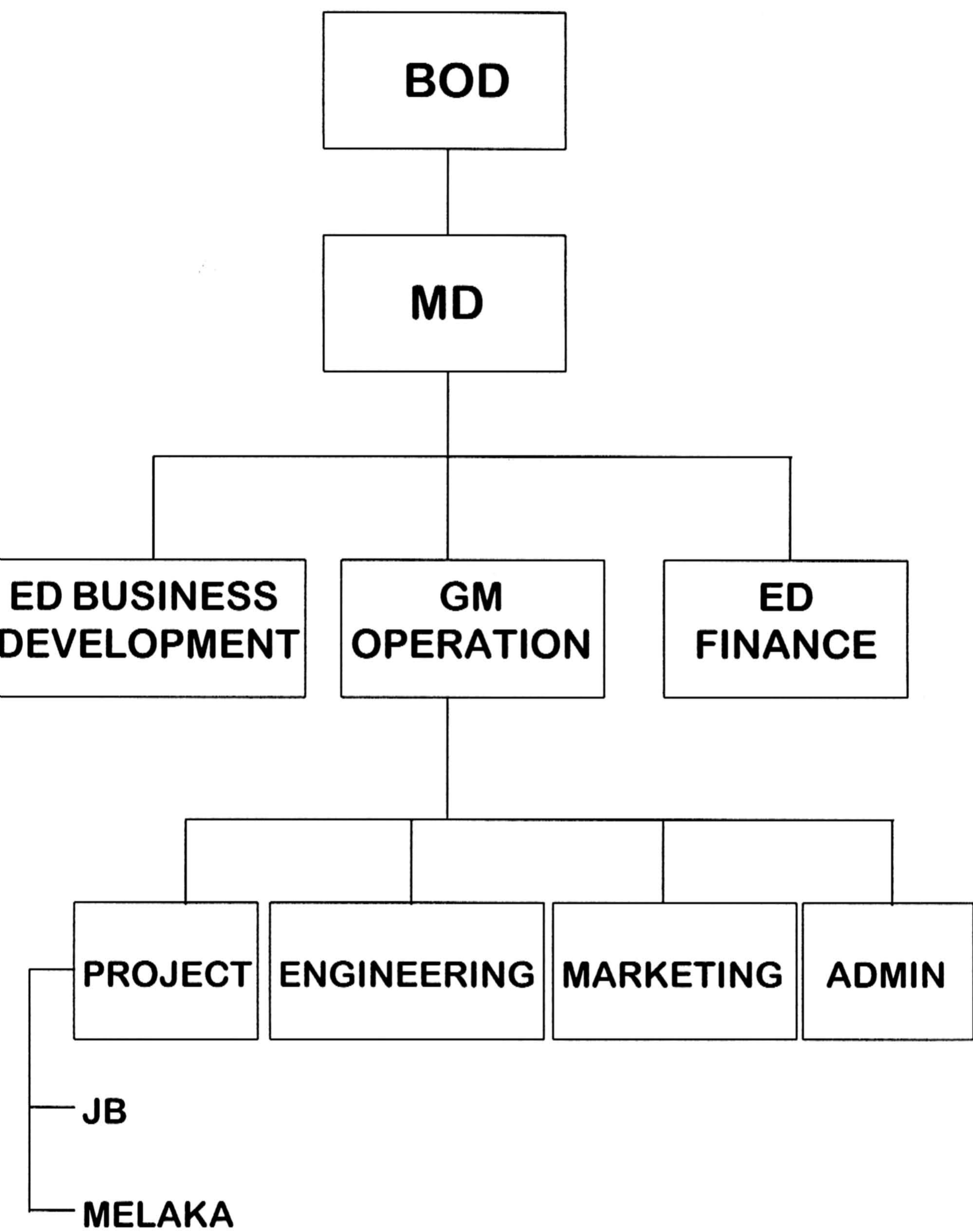
A 5.3 Management

The company will be managed by experienced personnel with appropriate backgrounds to ensure effective strategy implementation. The pioneer status of the product and services to be offered by EDS to customers make it more challenging and demanding indeed. Figure A5.1 shows the organization structure of Elektrokad Sdn. Bhd. The board of directors of Elektrokad consists of several individuals whose professional expertise are desirable in enhancing the prospect for the company's success. They will make up a right blend of expertise in management, strategic planning, finance, technical etc. to be derived from the three component parties. Future plan for additional directors to include representatives from corporate sector and employees or labour union. The board of directors is fully responsible in establishing policies and guidelines for the company. It's principle roles and responsibilities include :

- Decision making on matters relating to financial obligations.
- Formation of subsidiaries, mergers and acquisitions
- Approval and adoption of yearly budget of the company
- Approval and adoption of Business Plan of the company

The company will be headed by a Managing Director who is appointed from one of the directors. Together with 2 other executive directors and a general managers, they made up a top management committee responsible for ensuring the operation of the company is being carried out according to the guidelines and policies issued by the Board of Directors. The Managing Director is fully responsible for the day to day running of the organization and reports directly to the Board of

**Figure A5.1 Organisation Structure Of
Elektrokad Sdn. Bhd.**



Directors. His duties include among others identifying business potentials and strategies, project implementation, formatting the company's business plan, meeting sales target, financial management, and general administration.

The Business Development section will be responsible for identifying possible business opportunities and subsequent strategy in realizing them. The effort to be carried out must be consistent with the overall business plan of the company whether it is near-term or long-term planning. It is most likely that this section will be headed by an Executive Director. The Finance section will be fully responsible for managing the financial matters of the company, including among others cashflow management, funding, financial analysis of the projects, procurement, etc. It is most likely that this section will be headed by an Executive Director. The Project section will be responsible for ensuring any project undertaken be completed within stipulated time, cost, and approved standards. This section will also be responsible for monitoring the performance of other company's office branches. The Engineering section will be responsible for providing technical support, and research and development of the company's products. The Marketing section will be responsible for undertaking measures or strategies in meeting the target sales, customer service and business plan of the Company. The Administration section will be responsible for managing the personnel,

A 5.4 Employees

The potential employees will be subjected to rigorous and thorough screening before being recruited to ensure only the right candidates being selected for the company. Emphasis shall be given on having workers with the right attitude and aptitude. Once recruited, they will be trained and developed continuously to ensure they are fully equipped with the right skills and expertise. The employees will be made up largely by the technical personnel's follow by the sales personnel. Their numbers will be increased gradually depending on the magnitude of the orders or the extent of the business expansion. It is estimated that, initially, the company will need around 20 employees. Table A5.1 shows the composition of workforce of the company forecasted for the next 2 years.

Table A5.1 Composition Of Workforce

	<u>Status</u>	<u>No.</u>	<u>Stage Of Recruitment</u>
1. Managing Director	PT	1	1st Month
2. Executive Director (Business Development)	PT	1	1st Month
3. Executive Director (Finance)	PT	1	1st Month
4. Executive (Human Resource)	FT	1	4th Month
5. Executive (Contract Management)	FT	1	4th Month
6. Executive (Procurement)	FT	1	4th Month
7. Manager (Operation)	FT	1	1st Month
8. General Manager (Operation)	F T	1	7th Month
9. Manager (Account & Finance)	F T	1	1st Month
10. Manager (Kluang and Muar)	F T	2	7th Month
11. Manager (JB)	F T	1	1st Month
12. Executive (Marketing)	F T	1	1st Month
13. Technicians (JB)	F T	4	1st Month
14. Technician (Kluang and Muar)	F T	4	7th Month
15. Clerks/ Steno (JB)	F T	6	1st Month
16. Clerks/ Steno (Kluang & Muar)	F T	4	7th Month

PT - Part Time

FT - Full Time