C - 13 PRIORITY RANKING STUDY

LUZON GRID

SYSTEM NAME: LUZON HPPS AREA ID : 1- 1

PARAMETERS FOR THE DISCOUNTING TECHNIQUE

BASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON PLANNING HORIZON : 2035
RESERVE CAPACITY : 0.

CALCULATION COMBINATION DISCOUNT RATE COST ESCALATION

1.00 0.12

CASE A-3

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DEMAND CURVE	MW) ENERGY (GW)		07.0	00.0	15304.	2605.0 15975.0	46.0 16841.	928.0 17954.	694	256.0 19964.	431.0 21038.	618.0 22185.	94.0 22653.	4015.0 24628.0	25.0 25931.	56.0 27326.	96.0 28795.	. 1	954.0	220.0 3200	502.0 33738.	.0 35523.	105.0 3743	
₩ 1 :	EAR POWER)	85	86	87	958 26	69	990 2	30	992 3	993	994 3	995	1996 40	756	988	885		4	S	ب	un.	2004	

* TABLE OF EXISTING - HYDRO POWER PLANTS *

, O	ON QI	NAME OF PLANTS	DEVEL.	DEVEL. IYPE GRADE PLANT	DEVEL. TYPE COMIS, GRADE PLANT YEAR	CAPACITY (MW)	GENERATED ENERGY (GWH)	FACTOR UNIT	UNIT	GENERATED PLANT NO.OF REMARK : ENERGY FACTOR UNIT (GWH)		
		AAGAT			# # # # # # # # # # # # # # # # # # #	360.00	814.40	0.26	2 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	100円	性 神 神 神 神 神 神 神 神 神 神 神 神 神 神 神 神 一	用量用限量的容易使用的性性的 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
CL (C	2 1- 1- 2- 8-2 (3 1- 1- 3-25-3	CASECNAN 180	N 0	യധ	1995 1967	258.00	1379,00	0 59	n 1-	COMMITTED. EXISTING		POWER UP IN PANTABANG
· **	1- 1- 3-25-4	PANTABANGAN	0	φ	1977	100,00	226,20	0.26	- N	EXISTING		
ທ	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27,10	0.26	-	EXISTING		
9	1- 1- 3-77-1	AMBUKLAO	o	ဗ	1956	75.00	169.70	0.26	n	EXISTING		
۲-	1- 1- 3-77-2	BINGA	0	ø	1960	100.00	226.20	0.26	4	EXISTING		
ø	1- 1- 4- 7-4	PANTAI	Ø	ဖ	1993	23.00	154,00	0.76	CI	COMMITTED		
ອາ	1- 1- 4-15-1	CALIRAYA	0	9	1945	32.00	72.40	0.26	4	EXISTING		
0	1-1-4-15-2	BOTOCAN	0	9	1948	17.00	38.50	0.26	- -	EXISTING		
=	1- 1- 4-15-3	KALAYAAN		9	1983	300,00	678.60	0.26	ĸ	ш	PUMPED STORAGE	RAGE
2	1- 1- 5-48-1	BUH1-BARIT	0	9	1957	1.80	4.10	0.26		EXISTING		
6	1- 1- 5-91-2	CAWAYAN	٥	9	1959	0.40	0.90	0.26		EXISTING		

DEVELOPMENT GRADE: NOTES:

TYPE OF PLANTS:

0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED

REMARK :	LUZON GRID LUZON GRID LUZON GRID LUZON GRID	LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID	LUZON LUZON LUZON LUZON LUZON	LUZON GRID LUZON GRID LUZON GRID LUZON GRID	LUZON GRID LUZON GRID LUZON GRID LUZON GRID	LUZON GRID LUZON GRID LUZON GRID
PLANT	0.700 0.700 0.470 0.470	0.470 0.470 0.470 0.470	0.470 0.470 0.730 0.730	0.700 0.700 0.730 0.730	0.730 0.730 0.730 0.700	0.700
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UNIT CAPACITY (KW)	100000. 75000. 150000.	100000. 200000. 150000. 300000. 200000.	350000 300000 55000 55000	300000. 300000. 55000. 55000.	\$5000. \$5000. \$5000. 300000.	600000. 600000. 300000.
COMIS. YEAR	1993 1994 1972 1977	1965 1970 1972 1972	9791 9791 9791 9891 9891	4 5 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1995 2005 2003 1998 1996	2002 2000 2000 4
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DEVEL.	n n o o o	00000	00000		១៩៩៩	ග ග ග
NAME OF PLANTS	ISABELA 1-2 ISABELA 3 BATAAN 1 BATAAN 2 MANILA 2	MANILA 1 SUCAT 2 SUCAT 1 SUCAT 4 SUCAT 3	MALAYA 2 MALAYA 1 MAK-BAN 1-2 WAK-BAN 3-4 MAK-BAN 5-6	CALACA 1 CALACA 2 BACON MANITO TIW: GEO-THERMAL 2	GEO-THERMAL 1 GEO-THERMAL 4 GEO-THERMAL 3 COAL THERMAL 2 COAL THERMAL 1	COAL THERMAL 4 COAL THERMAL 3 COAL THERMAL 5
LD NO.	2 2 2 2 2 4 1 1 1 1 1 1 1 2 1 2	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4 + 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	(A (b) 4 m)	0 F 0 G O	- 52 E 4 2	9 F 30 G G	22 23 24 25 25 25 25 25 25 25 25 25 25 25 25 25	27 1-28 1-

esterration and the contract of the contract o 1 - R-O-R FOR BASE LOAD
2 - GEOTERMAL
3 - R-O-R FOR DAILY PEAKING
4 - COAL FIRED
5 - OIL FIRED
6 - HYDRO WITH RESERVOIR TYPE
7 - DIESEL
8 - GAS TURBINE 0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED 9 - CANDIDATE OF FIXED INST. YEAR

RESULTS OF PRIORITY RANKING STUDY

CALCULATION CASE: 1 DISCOUNT RATE : 0.12 COST ESCALATION : 1.00

LIST OF CANDIDATE PROJECTS

THE PROJECT CAPACITY P.F. (MIL US\$) (MIL US\$) (YEARS) (Y	£ ti č	į	è				6 1 4 h	ASSUMED	o u	ا ده	STAGE	PRE-	PRE-CON-	CONST-
1 - 1	NO.	Z Š	ž -			NAME OF	CAPACITY (MW)	7 . P	CAPITAL	OPERATION (MIL US\$)	NDEX -	PLANT	LEAD TIME (YEARS)	PERIOD (YEARS)
2 1 - 1 - 1	, , ,	 	<u> </u>	j j				1				,	,	Ĺ
2 1- 1-1 6 DIDUYON 352.0 0.29 469.2 7.0 0 0 4 4 1 1 1 1 6 BINDNOAN 150.0 0.23 254.9 4.0 0 0 0 4 4 1 1 1 1 6 BINDNOAN 150.0 0.24 254.9 4.0 0 0 0 4 4 1 1 1 1 6 GENEO 600.0 0.24 251.9 4.0 0 0 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	-	-	1	<u>.</u>	م	NAN HOGUE	380.0		409.2	·-	Þ	>	¢†	ກ
3 1- 1- 1 6 MATURO 3 10- 1- 1 6 GHICO- 5 1- 1- 1 6 GHICO- 5 1- 1- 1 6 GHICO- 6 GHICO- 7 1- 1- 1 6 GHICO- 8 60.0 0.24 534.9 8.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	7	~	Ļ	<u>.</u>	9	DIDUYON	352.0		469.2	7.0	0	0	4	ĽΩ
4 1- 1- 1 6 BINONGAN 175.0 0.41 259.2 4.0 0 0 4 6 1- 1- 1 6 GENED 600.0 0.23 534.9 8.0 0 0 0 2 5 1- 1- 1 6 GENED 600.0 0.23 534.9 8.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ო	ო	Ļ	į.	9	MATUNO	180.0		267.0	4.0	0	0	4	ហ
5 1- 1- 1 6 CHICO-4 360.0 0.23 534.9 8.0 0 0 2 4 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	4	4	<u>_</u>	1	9	BINONGAN	175.0		269.2	0.4	0	0	4	ທ
6 1- 1- 1 8 GENED 8 1- 1- 1 8 BALOS-BALOO 8 1- 1- 1 8 BALOS-BALOO 9 1- 1- 1 8 BALOS-BALOO 10 1- 1- 1 9 BALOO 10 1- 1 9 BALOO 10 1- 1- 1 9	ເກ	ហ	-	<u>.</u>	9	CH1 CO-4	360.0		534.9	8.0	0	0	73	ល
7 1- 1 6 AGOS	ω	æ	1	1	8	GENED	600.0		801.5	12.0	0	0	4	ĸЭ
8 1- 1- 1 6 BALOG-BALOG 33.0 0.27 39.9 0.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	۲	~	-	-	9	AGOS	140.0		361.4	5.4	0	0	4	ហ
9 1- 1- 1 6 PALSIGUAN	∞	Ø	<u>+</u>	<u>.</u>	9	BALOG-BALOG	33.0		39.9	9.0	0	٥	4	4
10 1- 1- 1 6 SUPO 11 1- 1 6 SISIRITAN 11 1- 1 1 6 SADANCA ALT 12 1- 1 1 6 SADANCA ALT 13 1- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	O)	O	1	<u>.</u>	9	PALSIGUAN	42.0		173.1	5.6	0	0	4	ហ
10 1- 1- 1 6 ETEB 107.2 0.30 225.8 3.4 0 0 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0	0	-	<u>.</u>	9	SUPO	141.8	-	258.0	ი ი	0	٥	9	ស
6 1- 1- 1 6 SISIRITAN 417.6 0.26 610.5 9.2 0 0 6 6 1 1 1 1 1 1 1 2 8 AGBULU 216.2 0.31 403.0 6.0 0 0 0 6 1 2 1 1 1 1 1 1 1 1 1 2 1 ABDARCA ALT 299.4 0.31 312.2 4.7 0 0 0 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,	<u>.</u>			9	E1E8	107.2		225.8	9.4	0	0	s	ທ
11 1- 1- 1 6 AGBULU 216.2 0.31 403.0 6.0 0 0 6 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	7	ω	Ļ	<u>.</u>	9	SISIBITAN	417.6	•	610.5	9.2	0	0	စ	ທ
12 1- 1 6 SADANGA ALT 299.4 0.28 600.1 9.0 0 6 6 14 1- 1 1 6 UAGOS-2 138.6 0.31 312.2 4.7 0 0 6 6 15 0 0 15 15 1- 1 1 6 UAGOS-2 138.6 0.31 312.2 4.7 0 0 6 6 15 0 0 15 15 1- 1 1 6 UVA 30.9 0 0.35 285.2 2.6 0 0 6 6 17 17 1- 1 2 1 UVA 30.9 0 0.35 85.4 0.35 80.3 0.9 0 6 6 17 17 1- 2 1 AMBURAVAN 64.0 0.34 75.4 1.1 0 0 6 6 17 11 1- 2 1 AMBURAVAN 64.0 0.34 75.4 1.1 0 0 6 6 17 11 1- 2 1 AMBURAVAN 64.0 0.34 75.4 1.1 0 0 6 6 17 11 1- 2 1 AMBURAVAN 10.9 0 0.41 21.5 0.3 0 0 0 6 17 11 1- 2 1 AMBURAVAN 10.9 0 0.41 21.5 0.3 0 0 0 6 17 11 1- 2 1 AMBURAVAN 10.9 0 0.44 75.4 1.1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	m	=	<u>-</u>	-	9	AGBULU	216.2		403.0		0	0	ω	ហ
13 1- 1- 1 6 TABU 138.6 0.31 312.2 4.7 0 6 14 1- 1- 1 6 WAWA 61.0 0.35 285.2 4.3 0 6 15 1- 1- 1 6 WAWA 61.0 0.35 48.5 0.7 0 6 17 1- 2 1 LUYA 36.9 0.35 85.4 0.9 0 6 18 1- 2 1 LUYA 33.0 0.35 85.4 0.5 0 0 6 19 1- 2 1 LUYA 33.0 0.35 85.4 0.5 0 0 6 0 0 6 0 0 6 0 0 6 0 <t< td=""><td>4</td><td>7</td><td>+</td><td>1</td><td>6</td><td>SADANGA ALT</td><td>299.4</td><td></td><td>600.1</td><td>•</td><td>0</td><td>0</td><td>ω</td><td>ស</td></t<>	4	7	+	1	6	SADANGA ALT	299.4		600.1	•	0	0	ω	ស
14 1- 1 6 UP.AGOS-2 135.4 0.36 285.2 4.3 0 0 6 6 1.0 0.37 175.2 2.6 0 0 0 6 6 1.0 0.37 175.2 2.6 0 0 0 6 6 1.0 0.37 175.2 2.6 0 0 0 6 6 1.0 0.37 175.2 2.6 0 0 0 6 6 1.0 0.37 175.2 2.6 0 0 0 6 6 1.0 0.34 1.1 0 0 0.34 1.1 0 0 0 6 6 1.0 0.34 1.1 0 0 0 6 6 1.0 0.34 1.1 0 0 0 0 6 6 1.0 0.34 1.1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ī	<u>ე</u>	<u>.</u>	ļ		TABU	138,6	•	312.2	•	0	0	9	ល
15 1- 1- 1 6 WAWA 16 1- 1- 2 1 NAGUILIAN 26.9 0.35 48.5 0.7 0 0 6 17 1- 1- 2 1 SAKUM 18 1- 1- 2 1 SAKUM 19 1- 1- 2 1 AMBURAYAN 10 0.34 75.4 1.1 0 0 6 20 1- 1- 2 1 AABURAYAN 20 1- 1- 2 1 AABURAYAN 21 1- 1- 2 1 APAYAO 22 1- 1- 2 1 APAYAO 22 1- 1- 2 1 APAYAO 23 1- 1- 2 1 APAYAO 24 1- 1- 2 1 APAYAO 25 1- 1- 2 1 APAYAO 27.3 0.46 40.7 0.6 0 0 6 28 1- 1- 2 1 AABURAYAN 20 1- 1- 2 1 APAYAO 21 1- 1- 2 1 APAYAO 22 1- 1- 2 1 APAYAO 23 1- 1- 2 1 APAYAO 24.5 0.46 40.7 0.6 0 0 6 25 1- 1- 2 1 APAYAO 27.3 0.46 40.7 0.6 0 0 6 28 1- 1- 2 1 APASIL 29 1- 1- 2 1 APASIL 20 2- 1- 1- 2 1 APASIL 20 3- 1- 1- 2 1 APASIL 20 3- 1- 1- 2 1 APASIL 20 3- 1- 1- 2 1 APASIL 20 1- 1- 2 1 APASIL 21 1- 2 1 APASIL 22 1- 1- 2 1 APASIL 23 1- 1- 2 1 APASIL 24.8 0.46 30.0 0.4 0 0 6 25 1- 1- 2 1 APASICANN 27 1- 1- 2 1 APASICANN 28 1- 1- 2 1 APASICANN 29 1- 1- 2 1 APASICANN 20 1- 1- 2 1 APASICANN 20 1- 1- 2 1 APASICANN 21 1- 2 1 APASICANN 22 1- 1- 2 1 APASICANN 23 1- 1- 2 1 APASICANN 24.8 0.46 28.1 0.4 0 0 0 6 25 1- 1- 2 1 APASICANN 27 1- 1- 2 1 APASICANN 28 1- 1- 2 1 APANO-2 29 1- 1- 2 1 APANO-3 9.5 0.46 21.9 0.3 0.4 0 0 0 6	9	4	-	<u>+</u>	9	UP.AGOS-2	135.4		285.2		0	o	ഗ	ល
16 1- 1- 2 1 LUYA 17 1- 1- 2 1 LUYA 18 0.35 60.3 0.7 0 0 6 18 1- 1- 2 1 LUYA 19 1- 1- 2 1 LUYA 19 1- 1- 2 1 AMBURAYAN 10 9.35 85.4 0.5 0 0 0 6 20 1- 1- 2 1 ABRA 20 1- 1- 2 1 ABRA 21 1- 1- 2 1 ABRA 22 1- 1- 2 1 CHICO-1R 22 1- 1- 2 1 CHICO-2R 23 1- 1- 2 1 CHICO-2R 24 1- 1- 2 1 CHICO-2R 25 1- 1- 2 1 CHICO-2R 26 1- 1- 2 1 CHICO-2R 27 1- 1- 2 1 CHICO-2R 28 1- 1- 2 1 TANUDAN 20 2 0.46 25.2 0.4 0 0 6 25 1- 1- 2 1 TANUDAN 20 2 0.46 30.0 0.4 0 0 6 25 1- 1- 2 1 TANUDAN 20 2 0.46 30.0 0.4 0 0 6 25 1- 1- 2 1 TANUDAN 20 2 0.46 29.3 0.4 0 0 6 27 1- 1- 2 1 CASECNAN 27 1- 1- 2 1 CASECNAN 28 1- 1- 2 1 CASECNAN 29 0.47 24.5 0.46 29 1- 1- 2 1 AGNO-2 29 1- 1- 2 1 AGNO-2 20 1- 1- 2 1 AGNO-3 21 1- 2 1 AGNO-3 21 1- 3 1 AGNO-3	17	t.	<u>_</u>	1	~	WAWA	61.0	0.37	175.2	٠	0	0	ဖ	ເດ
17 1- 1- 2 1 LUYA 18 0.35 60.3 0.9 0 0 6 18 1- 1- 2 1 AMBURAYAN 19 1- 1- 2 1 AMBURAYAN 10 9 0.41 21.5 0.3 0 0 6 20 1- 1- 2 1 APAYAD 21 1- 1- 2 1 APAYAD 22 1- 1- 2 1 CHICO-1R 22 1- 1- 2 1 CHICO-2R 24.5 0.46 43.3 0.6 0 0 6 24 1- 1- 2 1 CHICO-2R 24.5 0.46 43.3 0.6 0 0 6 25 1- 1- 2 1 FANUDAN 20.2 0.46 25.2 0.4 0 0 6 24 1- 1- 2 1 FANUDAN 20.2 0.46 39.0 0.4 0 0 6 25 1- 1- 2 1 TANUDAN 20.2 0.46 34.0 0.5 0 0 6 25 1- 1- 2 1 TANUDAN 20.2 0.46 34.0 0.5 0 0 6 25 1- 1- 2 1 TANUDAN 20.2 0.46 34.0 0.5 0 0 6 25 1- 1- 2 1 TANUDAN 20.2 0.46 34.0 0.5 0 0 6 20 1- 1- 2 1 CASECNAN 20 1.5 0.45 31.6 0.45 0.46 0.5 0 0 6 20 1- 1- 2 1 AGNO-2 20 1- 1- 2 1 AGNO-3 21 1- 2 1 AGNO-3 21 1- 3 1 AGN	82	16	-	1	٠- د	NAGUILIAN	36.9	0.35	48.5		0	0	œ	**
18 1- 1-2 1 BAKUM 19 1- 1-2 1 AMBURAYAN 10.9 0.41 75.4 1.1 0 0 6 20 1- 1-2 1 APAYAO 21 1- 1-2 1 APAYAO 22 1- 1-2 1 APAYAO 22 1- 1-2 1 CHICO-1R 27.3 0.46 40.7 0.6 0 0 6 23 1- 1-2 1 CHICO-2R 24.5 0.46 40.7 0.6 0 0 6 24 1- 1-2 1 FASIL 25 1- 1-2 1 TANUDAN 20.2 0.45 30.0 0.4 0 0 6 25 1- 1-2 1 TANUDAN 20.2 0.46 34.0 0.5 0 0 6 25 1- 1-2 1 TANUDAN 20.2 0.46 34.0 0.5 0 0 6 21 1 1-2 1 TANUDAN 20.2 0.47 24.8 0.46 31.6 0.45 0 0 6 22 1- 1-2 1 TANUDAN 20.3 0.47 28.1 0.4 0 0 6 20 1- 1-2 1 AGNO-2 20 1- 1-2 1 AGNO-3 21 1-2 1 AGNO-3 22 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3 1-3	19	17	<u>.</u>	!	~	LUYA	40.8	0.35	60.3	٠	0	o	ø	4
19 1- 1-2 1 AMBURAYAN 64,0 0.34 75.4 1.1 0 0 6 20 1- 1-2 1 ABRA 21 1- 1-2 1 APAYAD 22 1- 1-2 1 APAYAD 22 1- 1-2 1 CHICO-1R 23 1- 1-2 1 CHICO-2R 24.5 0.46 43.3 0.6 0 0 6 24 1- 1-2 1 SALTAN 20.2 0.46 30.0 0.4 0 0 6 25 1- 1-2 1 TANUDAN 20.2 0.46 30.0 0.4 0 0 6 25 1- 1-2 1 TANUDAN 20.2 0.46 34.0 0.5 0 0 6 25 1- 1-2 1 TANUDAN 21.5 0.46 32.3 0.4 0 0 6 27 1- 1-2 1 UP.CASECNAN 21.5 0.46 31.6 0.4 0 0 6 28 1- 1-2 1 AGNO-2 30 1- 1-2 1 AGNO-3	20	2	!	1		BAKUM	33.0		35.4		0	0	w	4
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21 1- 1-2 1 APAYAO 15.8 0.46 39.4 0.6 0 0 6 5 22 1- 1-2 1 CHICO-1R 27.3 0.46 40.7 0.6 0 0 0 6 5 12 1- 1-2 1 CHICO-2R 34.5 0.46 43.3 0.6 0 0 0 6 5 23 1- 1-2 1 SALTAN 12.6 0.46 25.2 0.4 0 0 6 5 25 1- 1-2 1 TANUDAN 20.2 0.46 30.0 0.4 0 0 6 5 25 1- 1-2 1 TANUDAN 16.5 0.46 28.1 0.4 0 0 6 5 25 1- 1-2 1 UP.CASECNAN 11.5 0.46 28.1 0.4 0 0 6 5 25 1- 1-2 1 UP.CASECNAN 12.4 0.46 28.1 0.4 0 0 6 5 25 1- 1-2 1 AGNO-2 0.48 21.9 0.3 0 0.3 0 0 6	22	50	ļ.,	<u>.</u>	-	ABRA	10.9	0.41	21.5	٠	0	0	ဖ	4
22 1- 1- 2 1 CHICO-1R 27.3 0.46 40.7 0.6 0 0 6 23 1- 1- 2 1 CHICO-2R 34.5 0.46 43.3 0.6 0 0 6 24 1- 1- 2 1 FAS1L 20.2 0.46 25.2 0.4 0 0 6 25 1- 1- 2 1 TANUDAN 24.8 0.46 30.0 0.4 0 0 6 26 1- 1- 2 1 IBULAO 16.5 0.44 29.3 0.4 0 0 6 27 1- 1- 2 1 UP.CASECNAN 12.4 0.46 31.6 0.4 0 0 6 28 1- 1- 2 1 UP.CASECNAN 12.4 0.46 31.6 0.4 0 0 6 29 1- 1- 2 1 AGNO-2 9.5 0.48 21.9 0.3 0 0 6	23	21	<u>,</u>	<u>+</u>	2	APAYAO	15.8	0.46	39.4	•	٥	C)	ω	4
12 1- 1- 2 1 CHICO-2R 34.5 0.46 43.3 0.6 0 0 6 23 1- 1- 2 1 SALTAN 12.6 0.46 25.2 0.4 0 0 6 24 1- 1- 2 1 PASIL 20.2 0.46 30.0 0.4 0 0 6 25 1- 1- 2 1 TANUDAN 24.8 0.46 34.0 0.5 0 0 6 26 1- 1- 2 1 IBULAO 16.5 0.44 29.3 0.4 0 0 6 27 1- 1- 2 1 UP.CASECNAN 17.5 0.46 31.6 0.5 0 0 6 28 1- 1- 2 1 AGNO-2 0.5 0.48 21.9 0.3 0 0 6	24	22	<u>.</u>	+		CH1 CO-1R	27.3	•	40.7	•	0	0	ဖ	4
23 1- 1- 2 1 SALTAN 12.6 0.46 25.2 0.4 0 0 6 24 1- 1- 2 1 PASIL 20.2 0.45 30.0 0.4 0 0 6 25 1- 1- 2 1 TANUDAN 24.8 0.46 34.0 0.5 0 0 6 26 1- 1- 2 1 GULAO 16.5 0.44 29.3 0.4 0 0 6 27 1- 1- 2 1 CASECNAN 11.5 0.46 28.1 0.4 0 0 6 28 1- 1- 2 1 AGNO-2 0.45 31.6 0.4 0 0 6 30 1- 1- 2 1 AGNO-3 0.5 0.48 21.9 0.3 0 0 6	25	12	<u>, </u>		7	CH1C0-2R	34.5		43.3	٠	0	0	w	4
24 1- 1- 2 1 PASIL 20.2 0.46 30.0 0.4 0 6 6 25 1- 1- 2 1 TANUDAN 24.8 0.46 34.0 0.5 0 6 6 26 1- 1- 2 1 TANUDAN 16.5 0.44 29.3 0.4 0 6 5 27 1- 1- 2 1 CASECNAN 11.5 0.46 28.1 0.4 0 0 6 2 28 1- 1- 2 1 AGNO-2 0.0 0.47 24.5 0.4 0 0 6 6 30 1- 1- 2 1 AGNO-2 0.5 0.48 21.9 0.3 0 0.5 0 6	26	S	<u>.</u>	<u> </u>	2	SALTAN	12.6	0.46	25.2	•	0	0	φ	4
25 1- 1- 2 1 TANUDAN 24.8 0.46 34.0 0.5 0 6 6 2 1- 1- 2 1 IBULAO 16.5 0.44 29.3 0.4 0 0 6 2 7 1- 1- 2 1 CASECNAN 11.5 0.46 28.1 0.4 0 0 6 2 8 1- 1- 2 1 AGNO-2 0 0 0 6 0 0 6 0 0 6 0 0 0 0 0 0 0 0 0	27	24	<u>.</u>	1	2	PAST	20.2	•	30.0	•	0	0	ဖ	4
26 1- 1- 2 1 18ULAO 16.5 0.44 29.3 0.4 0 0 6 27 1- 1- 2 1 CASECNAN 11.5 0.46 28.1 0.4 0 0 6 28 1 2.4 0.46 31.6 0.5 0 0 6 29 1- 1- 2 1 UP.CASECNAN 12.4 0.46 31.6 0.5 0 0 6 29 1- 1- 2 1 AGNO-2 10.9 0.47 24.5 0.4 0 0 6 30 1- 1- 2 1 AGNO-3 9.5 0.48 21.9 0.3 0 0 6	28	25	1			TANUDAN	24.8	4	34.0		0		9	4
27 1- 1-2 1 CASECNAN 11.5 0.46 28.1 0.4 0 0 6 28 1- 1-2 1 UP.CASECNAN 12.4 0.46 31.6 0.5 0 0 6 29 1- 1-2 1 AGNO-2 10.9 0.47 24.5 0.4 0 0 6 30 1- 1-2 1 AGNO-3 9.5 0.48 21.9 0.3 0 0 6	29	26	-	1	2	BULAG	16.5	•	29.3	•	o	o	w	4
28 1- 1- 2 1 UP.CASECNAN 12.4 0.46 31.6 0.5 0 0 6 29 1- 1- 2 1 AGNO-2 10.9 0.47 24.5 0.4 0 0 6 3 0 1- 1- 2 1 AGNO-3 9.5 0.48 21.9 0.3 0 0 6	30	27	ļ.	-	2	CASECNAN	11.5	0.46	28.1	4.0	0	0	ιo	4
29 1~ 1~ 2 1 AGNO-2 10.9 0.47 24.5 0.4 0 0 6 3 30 1~ 1~ 2 1 AGNO-3 9.5 0.48 21.9 0.3 0 0 6	31	28	-	1	~	UP, CASECNAN	12.4	4	31.6	o.5		0	Q	4
30 1" 1" 2 AGNO-3 9.5 0.48 21.9 0.3 0 0	32	8	-	1	2	AGNO-2	10.9	4	24.5	4.0	ø	0	s	4
	9	30	-	<u>.</u>	. r-	AGNO-9	0	•	21.9	•	0	o	g	4

LIST OF SCREENED PROJECTS

			3		•	7220300	2	-	1
o S	K K W	TYPE	YEAR	CONNE.	CAPA CITY	MAX.0°	CAPITAL (OPERATION (MIL US\$)	WORTH (MIL US\$)
λgn	STUDY AREA : 1- 1	LUZON GRID	GRID						
	I I I I I I I I I I I I I I I I I I I						,	! :	! !
_	GEO-THERMAL 1	N	1995	ı	330.0	0.73	495.0	16.5	227.3
~	BINONGAN	G	1995	ı	175.0	0.41	269.2	4.0	115.0
(n)	COAL THERMAL	4	1996	ı	300.0	0.70	360.0	42.1	209.8
4	ABRA	-	1996	ı	10.9	0.41	21.5	0 .0	7.7
· w	GEO-THERMAL 2	N	1997	ı	330.0	0.73	495.0	16.5	181.2
, 4 0	COAL THERMAL	4	1998	•	300.0	0.70	360.0	42.1	167.4
٠,	SAN ROQUE	ဖ	1999	•	330.0	0.32	409.2	6.1	***
. 60	COAL THERMAL	63 64	2000	*	6000	0.70	720.0	84.3	256.8
) O	SALTAN	-	2000	•	12.6	0.46	25.2	4.0	5.7
	Novnaid	10	2001	•	352.0	0.29	469.2	7.0	101.5
_	COAL THERMAL	4	2002	•	600.0	0.70	720.0	84.3	212.7
	AGNO-3	-	2002	•	9.8	0.48	21.9	0.3	3.8
ı ez	GEO-THERMAL 3	N	2003	1	330.0	0.73	495.0	16.5	න . වේ
4	MATUNO	9	2003		180.0	0.30	267.0	4.0	46.0
· w	COAL THERMAL	4	2004	ı	300.0	0.70	360,0	42.1	84.3
· 40	SUPO	40	2004	ı	141.8	0.32	258.0	ຫ ຫ	39.7
, ,	GED-THERMAL 4	N	2005	i	330.0	0.73	495.0	16.5	73.2

SYSTEM NAME: LUZON HPPS AREA 1D : 1- 1

PARAMETERS FOR THE DISCOUNTING TECHNIQUE

BASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON PLANNING HORIZON : 2035
RESERVE CAPACITY : 0.

CALCULATION COMBINATION

DISCOUNT RATE COST ESCALATION

0.12

CASE A-4

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YEAR	POWER (MW)	3
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80	400	4714
∞	496.	5304.
1988	2605.0	15975.0
8	746.	6841.
1990	928.	7954.
1991	3080.0	►
1992	256.	9964.
C	431.	1038.
O	618.	2185.
O	694.	2653.
	16.	4628.
1997	4229.0	25931.0
G	56.	7326.
Ç);	696.	8795.
	-	
2000	4	0375.
2001	5220.0	32009.0
O	02.	3738.
2003	793.	5523.
0	105.	7433.
2002	6429.0	
1 5 5 1 1 1 1 1		; p = 2 2 1 1 1 1 1 1 1 5 2 4 4 3 3 3 4 4 3 3 3 4 4 3 3 3 4 4 3 3 3 4 4 3 3 3 4 4 3 3 3 4 4 3 3 3 4 4 3 3 3 4 4 3 3 3 3 4 4 3 3 3 3 4 4 3 3 3 3 3 4 4 3 3 3 3 3 3 4 4 3

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	# #													
	REBERT S SERVICE CONTROL OF SERV	POWER UP IN PANTABANG										RAGE		
	2 2 2 3 4 5 7 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	POWER UP										UMPED STOF		
NO,ÖF REMARK : UNIT	EXISTING	COMMITTED.	EXISTING	EXISTING	EXISTING		EXISTING	EXISTING	COMMITTED	EXISTING	EXISTING	EXISTINGE PUMPED STORAGE	EXISTING	EXISTING
	ж п	'n	! -	8			ო	*	ભ	4	ო	N		
PLANT FACTOR	жавиви 0.26	0.53	0.26	0.26	0.26		0.26	0.26	0.75	0.26	0.26	0.26	0.26	0.26
GENERATED PLANT ENERGY FACTOR (GWH)	814.40	1379.00	515.70	226.20	27.10	-	169.70	226.20	154.00	72.40	38,50	678.60	4.10	0.90
INSTALL CAPACITY (MW)	350.00	268.00	228,00	100.00	12.00		75.00	100.00	23.00	32.00	17.00	300.00	1.80	0,40
COMIS.	1983	1995	1967	1977	1981		1956	1960	1993	1945	1548	1983	1957	1959
TYPE	2 E E E	ထ	9	9	9		ω	9	ø	9	ω	ø	ဖ	ဖ
DEVEL. TYPE GRADE PLANT	# C	7	o	0	٥		0	0	N	o	٥	Ó	0	0
NAME OF PLANTS	авинания при	CASECNAN TBD	ANGAT	PANTABANGAN	MAS1 NAY		AMBUKLAO				BOTOCAN		BUHI-BARIT	
. ov 0	1 - 2 - 2 - 5 - 1	1-1-2-8-2	1- 3-25-3	1- 3-25-4	1- 3-25-8		1- 3-77-1	1- 3-77-2	1- 4- 7-4	1- 4-15-1	1- 1- 4-15-2	1- 4-15-3	1- 5-48-1	1- 1- 5-91-2
	# I # +-	<u></u>	L	1	<u>+</u>		, T	1		1-1-	0.0	<u>;</u>		13 1-
Š.	8 4	N	n	4	L()		Ψ		ريد		ř		-	* -

NOTES: DEVELOPMENT GRADE: 1

TYPE OF PLANTS:

0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED

* TABLE OF EXISTING THERMAL POWER PLANTS * **这种的大学的专家的大学的主义和特殊的主义的大学的大学的大学的大学的大学的大学的大学的**

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REMARK	LUZON LUZON LUZON LUZON LUZON	LUZON LUZON LUZON LUZON	LUZON LUZON LUZON LUZON LUZON	LUZON LUZON LUZON LUZON LUZON LUZON LUZON LUZON LUZON LUZON LUZON LUZON LUZON LUZON	ING TYP
	7111) s.e. = 0 e.e.			ANTS: R-O-R FOR BASE LOAD GEOTERMAL R-O-R FOR DAILY PEAKING COAL FIRED OIL FIRED HYDRO WITH RESERVOIR TYPE DIESEL
F C E	88888	000000	000000		ANTS: R-O-R FOR BASE LOAD GEOTERWAL R-O-R FOR DAILY PEA COAL FIRED OIL FIRED HYDRO WITH RESERVO! DIESEL
PLANT FACTOR	0.700 0.700 0.470 0.470	0.470 0.470 0.470 0.470	0.470 0.470 0.730 0.730	0.700 0.700 0.730 0.730 0.730 0.730 0.730 0.700 0.700 0.700	2
20 10 10 10 10 10 10 10 10 10 10 10 10 10					ANTS: R-O-R FOR B. GEOTERMAL R-O-R FOR D. COAL FIRED OIL FIRED HYDRO WITH DIESEL
NO.OF UNIT	- 0		000		PLANTS: - GEOTER - COAL F - OIL FI - DIESEL
Ž 1					TYPE OF PLANTS: 1 - R-O-R FOR BASE LOAD 2 - GEOTERMAL 3 - R-O-R FOR DAILY PEA 4 - COAL FIRED 5 - OIL FIRED 6 - HYDRO WITH RESERVO! 7 - DIESEL 8 - GAS TURBINE
UNIT CAPACITY (KW)	00000. 00000. 50000. 75000.	100000. 150000. 200000. 200000.	300000. 350000. 55000. 55000. 55000.	300000 55000 55000 55000 55000 55000 600000	8 H
CAPA	001	100 200 300 300 300	0 00 00 00 00 0 00 00 00 00	වීට් විසින්ති ශ්ර්ත්ප්ප්	ii i- g s s oc
					# AB
COMIS.	1994 1993 1977 1972	1968 1968 1970 1971	979 979 979 978 978 978	20003 20003 20003 20003 20003 20003 20003 20003 20003	CTION FIXED INST. YEAR
Ő Ž	** ** ** ** **			NN *** NN ** **	NO GE
PLANT TYPE	4 4 ល ល ល	សលសលស	លេសលេល	4411111 111111111 111111111111111111111	
O. 8					SONSTRA SD TE OF
DEVEL	00000	00000	00000		NT GRADE: EXISTING UNDER CONS CONMITTED CANDIDATE
5 8 8					
S				- 00437 77 -0 04	M 1 1 1 1
P P N	m - v		8 - 8 1 - 8 1 - 1 - 8	0 993	# M
O 8	77 19	4 + + + + 2 = 2 = 2		CALACA 2 CALACA 1 BACON MANITO TIWI GEO-THERMAL GEO-THERMAL GEO-THERMAL COAL THERM COAL THERM	
NAME OF PLANTS	SABELA ISABELA BATAAN BATAAN	MANILA SUCAT 1 SUCAT 2 SUCAT 3	MALAYA MALAYA MAK-BAN MAK-BAN	CALACA CALACA CALACA A TIWI GEO-THI GEO-THI COAL COAL	NOTES:
k # # 10 12	8-8	- 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	0 0 4 4 4 1 1 1 1 1 1 - 0 0 - 0	2-1-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-6-	S S
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	11111		11111		# 9 8
#	11111		11111		以 以 元
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*					

RESULTS OF PRIORITY RANKING STUDY

CALCULATION CASE: 1 DISCOUNT RATE : 0.12 COST ESCALATION : 1.00

LIST OF CANDIDATE PROJECTS

CONST-RUCTION PERIOD (YEARS)

72

											1			
								ASSUMED	O U	بر دی	STAGE	PRE	PRE-CON-	CONST-
SER.	PLANT	PRC	PROJECT				INSTALLED	MAXIMUM	1111111	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	DEVELOP.	. CEDING	STRUCTION	RUCT I ON
8	0	_	۵	F	TYPE	NAME OF PROJECT	CAPACITY (MW)	u. G	CAPITAL (MIL US\$)	OPERATION (MIL US\$)	INDEX	PLANT	LEAD TIME (YEARS)	PERIOD (YEARS)
	 	1		i				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	* * * * * * * * * * * * * * * * * * * *					1
-	, -	<u>+</u>	1	£-2	ω	SAN ROOUE	380.0	0.32	409.2	9	0	0	4	ស
М	C!	<u>.</u>	Ţ	_	و	DIDUYON	352.0	0.29	469.2	7.0	o	0	4	ιŋ
ო	es	<u>.</u>	<u>.</u> .	_	9	MATUNO	180,0	0.30	267.0	4.0	0	o	4	ហ
4	4		;	,	ý	BINONGAN	175.0	0.41	269.2	4.0	O	o	4	ທ
ហ	w	1.	Ļ		Ģ	CHICO-4	360.0	0.23	534.9	8.0	Ö	0	23	ເດ
ιo	ω	<u>-</u>	-	_	ý	GENED	600.0	0.24	801.5	12.0	0	0	4	ស
ŀ	-	1	Ļ		9	AGOS	140.0	0.44	361.4	5.4	0	O	4	Ŋ
Ø	ಐ	Ļ	~~		ý	BALOG-BALOG	33.0	0.27	39.9	9.0	o	0	4	4
ග	6	ļ	<u>,</u> _	_	S	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	Ŋ
0	9	;	ļ	_	ω	SUPO	141.8	0.32	258.0	9. ₀	0	٥	φ	ເກ
	0		<u>.</u>	-		ETEB	107.2	0.30	225.8	9. 4	0	O	w	τĊ
Ä	ဖ	1		_	w	SISIRITAN	417.6	0.26	810.5	9.5	0	0	w	v)
<u>(,</u>	=	<u>, </u>	:		ø	AGBULU	216.2	0.31	403.0	6.0	0	0	ω	ເດ
4	72	÷	1		φ	SADANGA ALT	299.4	0.28	600.1	0.6	0	o	ω	ហ
t.	13	<u>+</u>	1	_		TABU	138.6	•	312.2	4.7	o	0	ဖ	Ŋ
9	*	<u>.</u>	<u>+</u>	_		UP. AGOS-2	135.4	•	285.2	4 w	0	0	ဖ	LO
-	ŭ	1	<u>.</u>			WAWA	61.0	0.37	175.2	2.6	0	o	Q	w
18	16	<u>1</u>	<u>:</u>	2	-	NAGUILIAN	36.9	0.35	48.5	7.0	0	o	v)	4
σ •	17	1	<u>+</u>	2	,	LUYA	40.8	0.35	60.3	6.0	0	O	9	4
20	.∞	<u>.</u>	1	ď		BAKUM	33.0	0.35	35.4	0.8	0	0	9	4
21	6	1	1	۲3	,	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	Q	4
22	50	1	-	8	,	ABRA	10.9	0.41	21,5	e.0	0	0	ω	4
23	23	1	<u>.</u>	61		APAYAO	15.8	0.46	39.4	9.0	0	0	છ	4
24	22	1	<u>_</u>	æ	<u>.</u> _	CH1CO-1R	27.3	0.46	40.7	9.0	o,	0	9	4
25	7	-	-	ď	_	CH1CO-2R	34.5	0.46	43.3	•	0	0	9	4
26	23	<u>_</u>	<u>+</u>	8	_	SALTAN	12.6	0.46	25.2	4.0	0	0	ø	4
27	24	<u>.</u>	1	2	,	PASIL	20.5	0.46	30.0		0	0	9	4
28	25	<u></u>	;	0	,-	TANUDAN	24.8	0.46	34.0	ស ()	0	O	9	4
29	56	1	1	(1		IBULAO	16.5	0.44	29.3	4.0	0	o	တ	4
30	2.5	+	-	N	,	CASECNAN	11.5	0.46	23.1	o 4.	0	0	9	4
E)	28	1	<u>.</u>	N	-	UP CASECNAN	12.4	0.46	31.6	0.5	0	0	ဖ	4
17	53	-	<u>.</u>	~		AGNO-2	10.9	0.47	24.5	4.0	0	o	ဖ	4
(e)	30		1	N		AGNO-3	g.	0.48	21.9	e. 0		0	9	4
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LIST OF SCREENED PROJECTS

1	WORTH (MIL US\$)		235.1	115.0	203.0	139.4	161.8	298.8	7.4	17.0	238.2	102.8	6.1	8.:	163.6	52.0	4,49
-	OPERATION (MIL US\$)		42.1	4.0	16.5	6.1	16.5	84.3	4.0	1,1	84.3	16.5	<u>ن</u>	16.5	84.3	5.0	7.0
000	CAPITAL (MIL US\$)		360.0	269.2	495.0	409.2	495.0	720.0	29 3	75.4	720.0	495.0	34.0	495.0	720.0	403.0	469.2
ASSUMED	P.F.		0.70	0.41	0.73	0.32	0.73	0.70	0.44	0.34	0.70	0.73	0.46	0.73	0.10	0.31	000
	CAFA- CITY (MW)		300.0	175.0	330.0	390,0	330.0	600.0	10.5	54,0	600.0	330.0	24.8	330.0	600.0	216.2	0.80
1	YEAR.		. 1	,	ŀ	ı	:	ı	1	•	•	•	ı	,	ı		١
1	VEAR	GRID	1995	1995	1996	1997	1998	1999	1959	2000	2001	2002	2002	2003	2004	2004	3000
	TYPE	LUZON	₹	ဖ	N	w	€1	*	,.	-	7	N		64	4	φ	•
	N A N E	STUDY AREA : 1- 1	COAL THERMAL 1	BINONGAN	GEO-THERMAL 1	SAN ROQUE	GEO-THERMAL 2	COAL THERMAL 2	IBULAO	AMBURAYAN	COAL THERMAL 3	GEO-THERMAL 3	TANUDAN	GEO-THERMAL 4	COAL THERMAL 4	AGBULU	2002
	ON N	STUDY	10	20	ဗို	4	90	90	20	80	. 6	0	-	12	· 67	4	

LUZON GRID

SYSTEM NAME: LUZON HPPS AREA 1D : 1- 1 PARAMETERS FOR THE DISCOUNTING TECHNIOUE

BASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON PLANNING HORIZON : 2035
RESERVE CAPACITY : 0.

CALCULATION COMBINATION

DISCOUNT RATE COST ESCALATION

0.12

1.00

CASE_B-8

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YEAR		
1985	307.	147.
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98	496.	304.
1988	2605.0	15975.0
•	746.	841.
9	ς,	954.
G)	.060	8947.
1592	3256.0	19964.0
99	431.	1038.
O)	618.	2185.
(F)	694.	2653.
O	966.	4318.
S	124.	5290.
1998	4289.0	26302.0
ø	461.	7354.
8	60	8449.
8	825.	958
2002	5018.0	30770.0
8	219.	2000.
8	427.	3280.
2002	5644.0	34612.0
1 1 1 1 1 1 1		

1 1- 1- 2- 8-1 MAGAT
2 1- 1- 2- 8-2 CASECNAN TBD 2 6 1995 268.00 1379.00 0.59 3 COMMITTED. POWER UP IN PANTABANG
3 1- 1- 3-25-3 ANGAT
4 1- 1- 3-25-4 PANTABANGAN 0 6 1977 100.00 226.20 0.26 2 EXISTING
5 1- 1- 3-25-5 MAS!#AY
0 6 1981 12.00 27.10 0.26 1 EXISTING EXISTINGE PUMPED STORAGE EXISTING EXISTING GENERATED PLANT NO. OF REMARK : ENERGY FACTOR UNIT EXISTING EXISTING COMMITTED EXISTING EXISTING 0 4 N 4 0 N -- --0.26 0.26 0.26 169.70 226.20 154.00 72.40 38.50 4.10 (GWH) 678.60 INSTALL 75.00 100.00 23.00 32.00 17.00 300,00 1.80 0.40 (MM) DEVEL. TYPE COMIS. GRADE PLANT YEAR 1956 1960 1993 1945 1948 1983 1957 1959 တြယ္လ္လ 00000 000 NAME OF PLANTS PANTABANGAN MASI*M*AY KALAYAAN BUHI-BARIT AMBUKLAO BINGA CAL I RAYA BOTOCAN CAWAYAN PANTA 1- 1- 4-15-3 1- 1- 5-48-1 1- 1- 5-91-2 . 2 9 ~ 8 5 0 12 2 9

NOTES: DEVELOPMENT GRADE:

TYPE OF PLANTS:

0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED

; ; ;	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	98810 98810 98810 98810 68810 68810 68810 68810 68810 68810	문 같 및 제 참 등
REWARK :	0 NOZON 0 NOZON 1 NOZON 0 NOZO	CUCZON G COCCON G COC	in in it
PLANT FACTOR	0.700 0.700 0.470 0.470 0.470 0.470 0.470	0.470 0.730 0.730 0.730 0.730 0.730 0.730 0.730 0.730 0.730 0.730 0.730 0.700 0.700	TYPE OF PLANTS: 1 - R-O-R FOR BASE LOAD 2 - GEOTERMAL 3 - R-O-R FOR DAILY PEAKING 4 - COAL FIRED 5 - OIL FIRED 6 - HYDRO WITH RESERVOIR TYPE 7 - DIESEL 8 - GAS TURBINE
NO. OF UNIT	(V		TYPE OF PLANTS: 1 - R-O-R FOR 8 2 - GEOTERMAL 3 - R-O-R FOR D 4 - COAL FIRED 5 - OIL FIRED 6 - HYDRO WITH 7 - DIESEL 8 - GAS TURBINE
UNIT CAPACITY (KW)	100000. 150000. 150000. 100000. 150000. 200000. 300000.	300000 8500000 8500000 850000 850000 850000 850000 850000 850000 850000 850000 850000	77PE OF 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
COMIS. YEAR	996 1999 1999 1996 1966 1968 1970 1770	119944 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998 12998	TON.
PLANT TYPE	៤៤៧២៧ ៧៧៧៧ ២	n r u u u u u u u u u u u u u u u u u u	RACTIO
DEVEL. GRADE	00000	០០០០០ សុខសុខ៣ ២២២២ ២៤	NT GRADE: EXISTING UNDER CONSTRACTION COMMITTED CANDIDATE OF FIXED
NAME OF PLANTS	ISABELA 3 ISABELA 1-2 BATAAN 2 BATAAN 1 MANILA 1 SUCAT 1 SUCAT 2 SUCAT 4	MALAYA 1 MALAYA 2 MAK-BAN 3-4 MAK-BAN 1-2 MAK-BAN 5-6 CALACA 2 CALACA 2 CALACA 1 GEO-THERMAL 1 GEO-THERMAL 2 GEO-THERMAL 2 GEO-THERMAL 3 COAL THERMAL 3 COAL THERMAL 3	NOTES: DEVELOPMENT GRADE: 0 - EXISTING 1 - UNDER CONS 2 - COMMITTED 9 - CANDIDATE
ON		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	F F F F F F F F F F F F F F F F F F F
, NO.	← 0 to 4 to to to 0 to 0 to 1 to 1 to 1 to 1 to	- 5 5 4 7 5 7 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 b g n n s t t

RESULTS OF PRIORITY RANKING STUDY

CALCULATION CASE: 1 DISCOUNT RATE : 0.12 COST ESCALATION : 1.00

LIST OF CANDIDATE PROJECTS

SER.	ቪ	PROJECT	ECT	1	: - :	INSTALLED	ASSUMED MAXIMUM	0	ا- د	1/ STAGE	PRE CEDING	PRE-CON-	CONST-
Š.	NO.		α.	TYPE	NAME OF PROJECT	CAPACITY (MW)	٠. و.	CAPITAL (MIL US\$)	OPERATION (MIL US\$)	•	PLANT	LEAD TIME (YEARS)	PERIOD (YEARS)
	٠								; t t 1 1 1	1 3 2 1 1 1	• • • • • • • •	 	
 (₩		_	ø	SAN ROQUE	390.0	0.32	409.2	6.1	ò	0	4	ហ
CI ·	8	<u>.</u>	<u>.</u>	φ	DIDUYON	352.0	0.29	469.2	7.0	0	0		ហ
ന	n	_	 L	9	MATUNO	180.0	0.30	267.0	4.0	0	Ó	. 4	, ri
4	4	<u></u>		g	BINONGAN.	175.0	0.41	269.2	4	0	0	- 4) LI
ល	ហ	<u>-</u>	<u>.</u>	ω	CH1CO-4	360.0	0.23	534:9	0,8	Ö	0	۰ ۸) LC
φ	ω	<u>-</u>	1	9	GENED	600.0	0.24	801.5	12.0	0	. α	1 4) LT
۲-	!	<u>.</u> .		ယ္	AGOS	140.0	0.44	361.4	5,4	0	o	. 4	មា
e)	က	<u>.</u>		ø	BALOG-BALOG	33.0	0.27	39.9	9.0	0	0	4) 4
O.	თ	1	:	9	PALSIGUAN	42.0	0.50	173.1	2.6	0	Ф	. 4	, ru
0	5	<u>-</u>		φ	supo	141.8	0.32	258.0	თ. დ	0	0	· (o	· vo
Ξ	2			ø	ETEB	107.2	0.30	225.8	ტ. ტ.	0	0	· w	េ
12	o	<u>.</u>	1	ဖ	SISIRITAN	417.6	0.26	610.5	9.5	0	o	ω.	ı,
13	=	1		o.	AGBULU	216.2	0.31	403.0	6.0	0	0	ဖ	ın (
4	12	Ļ	-	ø	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	9	س
5	9		1	9	TABU	138.6	0.31	312.2	4.4	٥	0	ဖ	ro.
5	4	<u>.</u>	- 1	ဖ	UP. AGOS-2	135.4	0.36	285.2	4. 9	٥	o	9	r3
13	ស	1		ဖ	WAWA	61,0	0.37	175.2	2.6	٥	0	9	r)
18	9	<u>.</u> .	1 2		NAGUILIAN	36.9	0.35	48.5	7.0	0	0	9	₹
-1	17	<u>.</u>	7 2	-	LUYA	40.8	0.35	60.3	6.0	0	0	9	¥
20	50	!	7 2		ваким	33.0	0.35	35.4	0.5	0	0	ဖ	. 4
2	<u></u>	<u>_</u>	- 2	-	AMBURAYAN	64.0	0.34	75.4	-:	0	0	9	4
22	20	<u>.</u>	7 2	-	ABRA	10.9	0.41	21.5	o.0	0	0	ø	4
23	27	1	7 2		APAYAO	15.8	0.46	39,4	9.0	0	o	ဖ	4
24	22	<u>-</u>	7 23		CH1 CO-1R	27.3	0,46	40.1	9.0	0	0	\$9.	4
25	12	<u>.</u>	Ţ.		CH1 CO-2R	34.5	0.46	43.3	9.0	0	0	g	4
26	23	<u>.</u>	- 2		SALTAN	12.6	4	25.2	4.0	0	0	y	4
27	24	<u>_</u>	7 2	<u></u>	PASIL	20.5	0.46	30.0	4.0	0	0	ဖ	4
28	25	<u>.</u>	7	-	TANUDAN	24.8	4	34.0	0.5	o	0	9	4
29	56	<u>.</u>	1 2	-	IBULAO	16.5	4	29.3	4.0	0	0	το	4
30	. 27		T 22	₩-	CASECNAN	11.5	0.46	28.1	4.0	0	0	9	4
m	28		2 1	 -	UP. CASECNAN	12.4	0.46	31.6	o. 0	0	0	တ	4
32	28		2	-	AGNO-2	10.9	0.47	24.5	4.0	0	0	б	4
	9		1	•-	AGNO-3	ග. ග	0.48	21.9	ο, ω,	0	0	9	4
1	1 5 6 6 7 1		!		1 1 3 1 1 5 1 1 5 1 1 1 1 1 1 1 1 1 1 1	11111111111	1015111111	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1181111111	1 1 1 1 1 1 1	1 1 1 1	************	

LIST OF SCREENED PROJECTS

				f		ASSUMED	က လ		
2	11 2	, 10 >	NST.	CONNE.	CAPA	MAXIMUM P n	1 - 4 - 6 - 6	100 H 40 H 90	PRESENT
2	:	† - -		; ;	(MM)	:	CMIL US\$)	CMIL USE)	CMIL US\$)
1 3 1 1 5		! ! !	; 1 1 1 1 1	; ; ; ; ;	1 2 1 5 6 1	! ! ! ! !	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
stupy	STUDY AREA : 1- 1	LUZON	GRID						
E ! !	1								
ő	GEO-THERMAL 1	2	1995		330.0	0.73	495.0	16.5	227.3
02	CHI CO-1R	,.	1995	,	27.3	0.46	40,7	9.0	16.2
9	GEO-THERMAL 2	N	1996	,	330.0	67.0	495,0	16.5	203.0
0 4	AMBURAYAN		1997	1	64.0	0.34	75,4	1.1	24.0
90	COAL THERMAL	4	1998	1	300.0	0.70	350,0	42.1	157.4
90	SAN ROQUE	ç	1939	,	390,0	0.32	403.2	6.1	600 600 600 600
20	COAL THERMAL	4	2000	,	300.0	0.10	360.0	42.1	133.4
08	GEO-THERMAL 3	84	2001	1	330.0	0.73	495.0	16.5	115.2
60	COAL THERMAL	4	2002	,	300.0	0.70	360.0	42.1	106.4
0	GEO-THERMAL 4	~	2002		330.0	0.73	435.0	16.5	102.8
	PASIL		2003	,	20.2	0.46	30.0	4.0	4.00
12	COAL THERMAL	4	2004	1	600.0	0.10	720.0	84.3	369.6
er)	WAWA	ဖ	2002	1	61.0	0.37	175.2	2.6	24.1

LUZON GRID

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SYSTEM NAME: LUZON HPPS AREA ID : 1- 1 PARAMETERS FOR THE DISCOUNTING TECHNIQUE

BASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON PLANNING HORIZON : 2035
RESERVE CAPACITY : 0.

CALCULATION COMBINATION

DISCOUNT RATE COST ESCALATION

0.12

1.00

CASE B-9

13-19

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ю	307	14147.0
Ø	400.	714.
Ø	496.	304
1988	2605.0	15975.0
1988	746.	841.
1990	6	17954.0
5	090	Ç
1992	3256.0	64.
O)	431.	103
1994	618.	2185.
O)	3694.0	22653.0
O)	3968.0	٠.
1997	124	ö
6		26302.0
1999	4461.0	ď
2000	4639.0	449.
2001	iO	586.
2002	83	770.
2003	5219.0	32000.0
2004		280.
2005	5644.0	34612.0

	TABANG		
	PANI		. ខា
			TORA
			PUMPED STORAGE
REMARK :	EXISTING COMMITTED, POWER UP IN PANTABANG EXISTING EXISTING	EXISTING EXISTING COMMITTED EXISTING EXISTING	EXISTINGE EXISTING EXISTING
NO. OF	8 4 0 1- 10 m	ш4И4 Ш шшОшш	~ → ₩
PLANT NO.OF	0.26 0.26 0.26 0.26	0.26	0.26 0.26 0.26
GENERATED ENERGY (GWH)	814.40 1379.00 515.70 226.20 27.10	169.70 226.20 154.00 72.40 38.50	678.60 4,10 0.90
INSTALL CAPACITY (MW)	0 6 1983 360.00 814.40 0.26 4 EXISTING 2 6 1995 268.00 1379.00 0.59 3 COMMITTED, POWER UP IN PANTABANG 0 6 1967 228.00 515.70 0.26 7 EXISTING 0 6 1977 100.00 226.20 0.26 2 EXISTING 0 6 1981 12.00 27.10 0.26 1 EXISTING	75,00 100.00 23.00 32.00 17.00	300.00 1.80 0.40
DEVEL, TYPE COMIS. GRADE PLANT YEAR	1993 1995 1967 1977 1981	1956 1950 1993 1945	1983 1957 1959
TYPE	ပ ပ ပ ပ ပ	တတတလထ	တလလ
DEVEL, TYPE GRADE PLANT	0 0 0 0 0	00000	000
40. ID NO. NAME OF PLANTS		AMBUKLAO BINGA PANTAI CALIRAYA BOTOCAN	KALAYAAN BUH!-BARIT CAWAYAN
Z i	MAN MAN	2 8 1 A A A A A A A A A A A A A A A A A A	
D NO.	2 1 1 2 8 1 1 2 8 1 1 1 2 8 1 1 1 1 2 1 8 1 2 1 1 1 1	6 1- 1- 3-77-1 7 1- 1- 3-77-2 8 1- 1- 4- 7-4 9 1- 1- 4-15-1 10 1- 4-15-2	2 1- 1- 5- 45-3 3 1- 1- 5- 48-3 1- 1- 5- 48-1
	11111		- 01 -
2	0 0 4 N	ው Γ~ ማ Ω Ω	E 0 E

NOTES: DEVELOPMENT GRADE:

TYPE OF PLANTS:

0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED

NO.	~-	NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS.	CAPACITY (KW)	NO. OR	PLANT FACTOR	REMARK :
•	•									
-		1- 2- 1-1	ISABELA 1-2	N	4	1993	100000.	R	0.700	LUZON GRID
24	<u>}</u>	1- 2- 1-2	ISABELA 3	N	ধ	1994	100000.		0.700	
n	1		BATAAN 1	0	٤Ŋ	1972	75000.	,	0.470	LUZON GRID
4	Ļ	100		0	so	1977	150000.		0.470	LUZON GRID
RI)	<u>;</u>	4	MANILA 2	0	ស	1966	100000.	•	0.470	LUZON GRID
ω	<u>, </u>	1- 4- 1-1	MANILA 1	ø	ស	1965	100000.	-	0.470	LUZON GRID
!~	<u>;</u>	1- 4- 2-2	SUCAT 2	0	ιΩ	1970	200000.	}	0.470	
60	7		SUCAT 1	o	ហ	1968	150000.	ţ-=	0.470	LUZON GRID
თ	1	1- 4- 2-4	SUCAT 4	0	Ŋ	1972	300000	₹c#	0.470	
2	1	1-4-2-3	SUCAT 3	o	ស	1971	200000.		0.470	LUZON GRID
	· <u>1</u>	1- 4- 3-2	MAL AYA 2	O	ĸ	1979	350000.		0.470	LUZON GRID
2	1	1-6-3-1	MALAYA 1	o	ស	1974	300000.	•	0,470	LUZON GRID
5	-	1- 4- 4-1	MAK-BAN 1-2	0	N	1979	55000.	Ŋ	0.730	LUZON GRID
4	1	1- 4- 4-2	MAK-BAN 3-4	٥	N	1980	55000.	7	0.730	LUZON GRID
Ω	1	1- 4- 4-3	MAK-BAN 5-6	0	N	1984	55000.	N	0.730	LUZON GRID
3	1	1.5	CALACA 1	0	4	1984	300000.	*	0.700	LUZON GRID
1.1	<u> </u>	1- 4- 5-2	CALACA 2	N	4	1992	300000	-	0,700	LUZON GRID
\$	1	ω	BACON MANITO	C)	C4	1991	55000.	ผ	0.730	LUZON GRID
(F)	1	1-5-1-1	TIME	Ö	N	1979	55000.	ພ	0.730	LUZON GRID
20	<u>,</u>	1-88-88-2	GEO-THERMAL 2	Φ	N	1996	55000	ده.	0.730	LUZON GRID
ev.	į	1.88-88-1	GEO-THERMAL 1	ຫ	01	1995	55000.	ဖ	0.730	LUZON GRID
22	1	1-88-88-1	GEO-THERMAL 4	Φ	N	2002	55000.	φ	0.730	LUZON GRID
S	-	1-88-88-1	GEO-THERMAL 3	OF	N	1999	55000.	ω	0.730	LUZON GRID
8	1	1-88-88-1	COAL THERMAL 2	(7)	4	2001	600000	<u></u>	0,700	
25	ŀ	1-88-88-1	THERMAL	φ.	4	1998	300000	g.ri.	0.700	LUZON GRID
26	1	1-89-99-3	COAL THERMAL 3	თ	4	2004	600000.	ę-s	0.700	LUZON GRID
5 6 1	\$ \$ \$		# # 11.		, , , , , , , ,	5000年初日日日			化化苯甲基苯甲甲基苯甲甲苯甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲	
		NC.	NOTES: DEVELOPMENT	OPMENT GRADE:	:		TYPE OF	OF PLANTS:	PLANTS: - R-O-R FOR BASE LOAD	Q

1 - R-O-R FOR BASE LOAD
2 - GEOTERMAL
3 - R-O-R FOR DAILY PEAKING
4 - COAL FIRED
5 - OIL FIRED
6 - HYDRO WITH RESERVOIR TYPE
7 - DIESEL
8 - GAS TURBINE 0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED 9 - CANDIDATE OF FIXED INST. YEAR

RESULTS OF PRIORITY RANKING STUDY

CALCULATION CASE: 1 DISCOUNT RATE : 5.12 COST ESCALATION : 1.00

LIST OF CANDIDATE PROJECTS

CONST- RUCTION PERIOD (YEARS)	; ;	7 12) ti	y vo) и	່ເກ	ທ	4	ល	ហ	гo	ភ	ß	ហ	ហ	ιΩ	ιO	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
PRE-CON- STRUCTION LEAD TIME (YEARS)		•	! %	. 4	. 4	4	4	4	4	9	9	9	9	S	ဖ	φ	9	ဖ	9	9	9	s	Q	9	w	9	9	ဖ	ຜ	ဖ	έφ	ιs	ø
PRE- CEDING PLANT	c) c	o c	0	Ó	0	0	o	0	Ö	0	٥	0	0	0	0	0	0	0	0	o	0	o	0	0	0	O	0	o	0	0	0	0
1/ 2 STAGE PRE- DEVELOP.CEDING INDEX PLANT	G) C	. 0	0	0	0	0	0	0	o	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	o	0		0	o
S T OPERATION (MIL US\$)	5.4	7	4		0.8	12.0	Α. 4.	9.0	2.6	თ. თ	9.4	9.5	6.0	0.6	4.7	4.3	2.6	. 2.0	0.9	0.5		e. 0	9.0	9.0	9.0	0.4	0.4.	0.5	4.0	4.0	0,5	4.0	8,0
C O CAPITAL CMIL US\$)	409.2	469.2	267.0	269.2	534.9	801.5	361,4	99	173.1	258.0	225.8	610.5	403.0	800.1	312.2	285.2	175.2	48.5	60,3	35.4	75.4	21.5	39,4	40.7	43.3	25.2	30.0	34.0	29.3	28.1	31.6	24.5	21.9
ASSUMED MAXIMUM P.F.	0.32	0.29	0,30	0.41	0.23	0.24	0.44	0.27	0.50	0.32	0.30	0.26	0.31	0.28	0.31	98.0	0.37	0.35	0.35	0.35	0.34	0.41	0,46	0.46	0.46	0.45	0.46	0.46	0.44	0.46	0.46	0.47	0.48
INSTALLED CAPACITY (MW)	390.0	352.0	180.0	175.0	360.0	600.0	140.0	33.0	42.0	141.8	107.2	4.7.6	216.2	299.4	138.6	135.4	61.0	36.9	40.8	33.0	64.0	10.9	15.8	27.3	34.5	12.6	20.2	24.8	16.5	11.5	12.4	10.9	9.5
NAME OF PROJECT	SAN ROQUE	DIDUYON	MATUNO	BINONGAN	CH1 CO-4	GENED	AGOS	BALOG-BALOG	PALSIGUAN	SUPO	ETEB	SISIRITAN	AGBULU	SADANGA ALT	TABU	UP. AGOS-2	WAWA	NAGUILIAN	LUYA	BAKUM	AMBURAYAN	ABRA	APAYAO	CH1 CO-1R	CHICO-2R	SALTAN	PASIL	TANUDAN	IBULAO	CASECNAN	UP. CASECNAN	AGNO-2	AGNO-3
TYPE	9	9	9	9	9	Q	ø	9	9	φ	9	ω	ဖ	မှ	9	ဖ	ω	,			•••	, _	_	**	,						-		~
I I			, 1	<u>-</u>	, I		,	۲ <u></u>	<u></u>	<u>, </u>	-	,- 1	 I	-	·	-	-	رب ا	ر در	e 1	α ι	N	N I	۲۷ ۱	ار ا	2	α ι	Ω 1	() 1	N 1	€1 1	(V	C1
PROJECT 1 D		÷	<u>.</u>	÷	÷	÷	-	<u>.</u> .	.	_	.	ri.		<u>.</u>	÷		<u>.</u>	ri.	ř	,~ I	i.	,-	÷	÷	÷ ,	÷	÷		•••	-	<u>-</u>	<u></u>	-
1	-	ţ-	-	÷	<u>.</u> .	÷	-	÷	<u>.</u>	<u>.</u>	÷		÷-	÷	÷	÷	<u></u>	÷	÷	÷	÷		÷	÷	÷	-	-	-	÷	÷	÷	÷	**
PLANT NO.		' 23	n	4	S	w	~	e)	တ	0	10	9		12	<u>~</u>	4	5	16	1.3		13	20	21	22	C.	23	24	52	26	27	28	50	90
SER. NO.		લ	n	4	ξÜ	Q	-	∞	o	9	=	75	 (1)	4	i)	18	17	←	19	20	Ñ	22	23	24	25	26	27	23	80	30	<u>რ</u>	32	9

LIST OF SCREENED PROJECTS

			1			ASSUMED	F 8 0 0	≻	
0	M K K K	7. PB	YEAR.	YEAR	0.1 TY	MAX MUSA . m . G	CAPITAL	OPERATION	PRESENT WORTH
i !	 	1 1 1 1	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(MM)	; ; ; ; ;	(\$SD TIM)	(MIL USS)	CHIL US\$1
ST.CO.Y	STUDY ABEA : 1- 1	1 11200	נו						
5	GEO-THERMAL 1	7	1995	ı	330.0	0.73	495.0	ю гэ	227.3
05	CH 1 CO-1R		1995	ŧ	27.3	0.46	40.7	9,0	16,2
60	GED-THERMAL 2	N	1996	ı	330.0	0.73	495.0	16.5	203.0
0	AMBURAYAN		1997	•	64.0	0.34	75.4	1.1	24.0
02	COAL THERMAL 1	4	1998	1	300.0	0.70	360.0	42.1	167.4
90	GEO-THERMAL 3	CI	1999		330.0	0.73	495.0	16.5	144.5
70	SAN- ROQUE	ŧo.	2000	٠	390.0	0.32	409.2	<u>.</u> د	99.1
80	COAL THERMAL 2	4	2001	1	600.0	0.70	720.0	84.3	238.2
60	GEO-THERMAL 4	C)	2002	1	330.0	0.73	495.0	i S	102.8
0	PASIL		2003	4	20.2	0.46	30.0	v O	4 8
-	COAL THERMAL 3	4	2004	•	600.0	0.70	720.0	84.3	169.6
Ğ	WAWA	Ø	2002	1	61.0	0.37	175.2	2.6	24.1

LUZON GRID

SYSTEM NAME: LUZON HPPS AREA 1D

PARAMETERS FOR THE DISCOUNTING TECHNIQUE

BASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON PLANNING HORIZON : 2035
RESERVE CAPACITY : 0.

CALCULATION COMBINATION

DISCOUNT RATE COST ESCALATION

1.00

CASE C-7

113	1
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2	1
2	1
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YEAR	POWER (MW)	CHMOXXXXXXX
8	308.	14148.0
80	400.	
1987	2496.0	303.
eO	595.	15914.0
8	689	16551.0
1990	5	17213.0
O)	2919.0	90
1992	36.	18618.0
1993	ω ω	936
1994	84.	20138.0
	•	
1995	3415.0	20943.0
Q1	86.	21991.(
1997	3765.0	23090.(
Ç	2	24244.(
Q)	52.	25457.(
2000	4359.0	26729.(
2001	•	806
2002		29469 (
2003		094
2004	-	32488 (
2005	5563.0	34113.0
1 1 1 1 1 1 1 1	***************	

* TABLE OF EXISTING - HYDRO POWER PLANTS * *************************

10. 11. 21. 8-1. MAGAT	DEVEL. TYPE COMIS. GRADE PLANT YEAR BRANERHHERER C 6 1983	COMIS.	CAPACITY (MW) GREENERER	GENERATED PLANT ENERGY FACTOR (GWH) ************************************	FLANT NO.01 FACTOR UNIT	NO.OF UNIT	REMARK:	# 	DEVEL, TYPE COMIS. INSTALL GENERATED PLANT NO.0F REMARK: GRADE PLANT YEAR CAPACITY ENERGY FACTOR UNIT GRADE PLANT YEAR (MW) GOWN) BENEVALEMENT OF THE CONTROL OF THE CONTRO
	9	1995	268.00	1379.00	0.59	m	COMMITTED.	POWER UP	POWER UP IN PANTABANG
	9	1967	228.00	515.70	0.26	~	EXISTING		
	9	1977	100.00	226.20	0.26	~	EXISTING		
	9	1981	12.00	27.10	0.26	·-	EXISTING		
	9	1956	75.00	169.70	0.26	ю ш	EXISTING		
	9	1960	100.00	226.20	0.26	4	EXISTING		
	2	1993	23.00	154.00	0.76	2	COMMITTED		
	9	1945	32.00	72,40	0.26	4 m	EXISTING		
	9	1948	17.00	38.50	0,26	ω m	EXISTING		
	9	1983	300.00	678.60	0.26	67	EXISTINGE P	PUMPED STORAGE	RAGE
	9	1957	1.80	4.10	0.26	 E	EXISTING		
	9	1959	0,40	0.90	0.26	- -	EXISTING		

DEVELOPMENT GRADE: NOTES:

TYPE OF PLANTS:

0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED

* TABLE OF EXISTING THERMAL POWER PLANTS *

计算原始的计算法的计算的计算法的计算法的计算法的证据的计算法的证据的证据的证据的证据的

PLANT REMARK : FACTOR	0.700 LUZON GRID 0.700 LUZON GRID 0.470 LUZON GRID 0.470 LUZON GRID 0.470 LUZON GRID	0.470 LUZON GRID 0.470 LUZON GRID 0.470 LUZON GRID 0.470 LUZON GRID 0.470 LUZON GRID	0.470 LUZON GRID 0.470 LUZON GRID 0.730 LUZON GRID 0.730 LUZON GRID 0.700 LUZON GRID 0.700 LUZON GRID	NOZO1 NOZO1 NOZO1 NOZO1 NOZO1 NOZO1 NOZO1 NOZO1 NOZO1	0.700 LUZON GRID
NO.OF UNIT	0	عسو شو منو منو	NNN C	, , , , , , , , , , , , , , , , , , ,	سو مي
CAPACITY (KW)	100000. 75000. 150000.	100000 200000 150000 300000 200000	300000. 58000. 58000. 58000. 300000.	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	300000.
COMIS.	1993 1994 1972 1977 1965	1965 1970 1968 1972 1972	1979 1979 1979 1988 1988 1988 1988 1988	1997 2001 2002 2002 1998 1998	2002
PLANT	ፋ ፋ ለ ነ ነነን ለ	លេសសល	ROWGING 440	AUG GGG44.	4 4
CRADE	N N O O O	00000	00000 001	បទ ១១១១១	து
NO, 1D NO, NAME OF PLANTS	L A 3 - 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2	4 4w	A 2 2 A 1 1 2 A 1 1 2 A 2 1 4 A 1 1 2 A 2 1 4 A 1 1 2 A 2 1	TIWI GEO-THERMAL 2 GEO-THERMAL 3 GEO-THERMAL 4 GEO-THERMAL 3 COAL THERMAL 3	THERMAL 4
NAME:	ISABELA ISABELA BATAAN 1 BATAAN 2 MANILA 2	MANILA 1 SUCAT 2 SUCAT 1 SUCAT 4 SUCAT 3	MALAYA 1 MAK-BAN 1 MAK-BAN 3 MAK-BAN 3 MAK-BAN 5	GEO-T GEO-T GEO-T GEO-T GEO-T COAL	COAL
D NO.	1 - 2 - 1 - 2 - 1 - 2 - 1 - 1 - 2 - 1 - 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11111111111111111111111111111111111111	ង	1-89-99-4
- 4 - 1	11111	11111	11111 11		<u>;</u> ;
S S	N W 4 W	o ⊱ e e o	-duan are	22222	26

0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED 9 - CANDIDATE OF FIXED INST. YEAR

TYPE OF PLANTS:

1 - FO-FRAND

2 - GEOFERAL

3 - R-O-R FOR DAILY PEAKING

4 - COAL FIRED

5 - OIL FIRED

6 - HYDRO WITH RESERVOIR TYPE

7 - DIESEL

8 - GAS TURBING

13-28

RESULTS OF PRIORITY RANKING STUDY

CALCULATION CASE: 1 DISCOUNT RATE : 0,12 COST ESCALATION : 1,00

OF CANDIDATE PROJECTS LIST CONST-RUCTION PERIOD (YEARS)

CAPITAL OPERATION (MIL US\$)

LL.

INSTALLED CAPACITY (MM)

TYPE NAME OF PROJECT

PROJECT <u>.</u>

SER. PLANT NO. NO.

ASSUMED C O S T

STAGE PRE- PRE-CU.,
DEVELOP.CEDING STRUCTION F
INDEX PLANT LEAD TIME
(YEARS) AGOS BALOG-BALOG PALSIGUAN SUPO ETEB SISIRITAN AGBULU SADANGA ALT UP. CASECNAN BAKUM AMBURAYAN ABRA SAN ROQUE DIDUYON MATUNO BINONGAN UP.AGOS-2 WAWA NAGUILIAN APAYAO CHICO-18 CHICO-28 SALTAN TANUDAN IBULAO CASECNAN CHICO-4 GENED PASIL TABU LUYA

LIST OF SCREENED PROJECTS

				•	1	1	ないのではい	м Э	<u>-</u>	
0	Z !	W	TYPE	YEAR	YEAR YEAR	CAPA- CITY (MW)	MAXIMUM P.F.	CAPITAL (MIL USX)	OPERATION (MIL US%)	PRESENT WORTH (MIL USY)
TUDY	AREA	STUDY AREA : 1- 1	LUZON	GRID						
	COAL	THERMAL	**	1996	1	300.0	0.70	360.0	42.1	209.9
22	GEO-1	GEO-THERMAL :	Ø	1997	,	330.0	0.73	495,0	16.5	181.2
60	COAL	THERMAL	2 4	1998	,	300.0	0.70	360.0	42.1	167.4
	COAL	THERMAL	9	2000	i	300.0	0.70	360.0	42.1	133.4
	CHIC	7-2R	_	2000	ı	0. 4 0.	0.46	43.3	9.0	9.8
90	GEO1	THERMAL 2	8	2001	4	330.0	0.73	495.0	16.5	115.2
	CUYA	:	•••	2001	1	40.8	0.35	60.3	6. O	12.2
80	GE0-1	THERMAL 3	N	2002	ı	330.0	0.73	495.0	16.5	102.8
	COAL	THERMAL	4	2002	ì	300.0	07.0	360,0	42.1	106.4
	SAN	ROBUE	9	2003	ı	390.0	0.32	409.2	6.1	70.5
	GEO-1	THERMAL 4	N	2004	,	330,0	0.73	495,0	16.5	82.0
12	E788		Ø	2004	,	107,2	0.30	225,8	ه. 4	34.7
m m	COAL	THERMAL 5	4	2005	1	300.0	0.70	360.0	42.1	75.7

#**##*********

PRIORITY RANKING STUDY *
PRIORITY RANKING STUDY *

SYSTEM NAME: LUZON HPPS AREA 1D : 1- 1

PARAMETERS FOR THE DISCOUNTING TECHNIQUE

BASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON PLANNING HORIZON : 2035
RESERVE CAPACITY : 0.

CALCULATION COMBINATION

DISCOUNT RATE COST ESCALATION

1.00

CASE C-8

DEMAND CURVE

111111111	****************	*************
YEAR	POWER (MW)	NERGY COWH
80	230	
∞	400,	714
1987	2496.0	5003
0	595.	5914
80	699.	83
တ	0 2082	3
1991	616	7002
O3	036	, 40 CM
1993	3158.0	
(i)	284.	0138
O.	3415.0	649
C)	586	1991
1997	3765.0	50
O	954.	4244
C)	152.	5457.
8	-	6729
00	577	8066
2002	4806.0	46
8	046	0942
8	298.	2488.
6	ě	!
2003	5553.0	34113.0

	INTABANG			
	N N			AGE
	a d			STOR
	POWER			PUMPED
NO OF REMARK : UNIT	EXISTING COMMITTED. POWER UP IN PANTABANG EXISTING	EXISTING EXISTING	EXISTING EXISTING COMMITTED EXISTING EXISTING	EXISTINGE PUMPED STORAGE EXISTING EXISTING
NO. OF	400	n -	w 4 W 4 w	20
PLANT	0.26 0.59	0.26	0.26 0.26 0.76 0.26	0.26 0.26 0.26
GENERATED PLANT ENERGY FACTOR (GWH)	814.40 1379.00 515.70	226.20	169,70 226.20 154.00 72.40 38.50	578.50 4.10 0.90
INSTALL GENERATED PLANT NO.OF REMARK: CAPACITY ENERGY FACTOR UNIT (MW) (GWH)	350.00 258.00 228.00	12.00	75.00 100.00 23.00 32.00 17.00	300.00
COMIS.	1	1977	1956 1960 1993 1945	1983 1957 1959
DEVEL. TYPE GRADE PLANT	က က က	യയ	യയയയയ	ചവവ
DEVEL.	000	00	00000	000
ID NO. NAME OF PLANTS	MAGAT CASECNAN TBD ANGAT	Pantabangan Masiway	AMBUKLAO BINGA PANTAI CALIRAYA BOTOCAN	KALAYAAN BUHI-BARIT CAWAYAN
D NO.	11 21 31 31 31 31 31 31 31 31 31 31 31 31 31	1- 1- 3-25-4	1- 1- 3-77-1 1- 1- 43-77-2 1- 1- 4- 7-4 1- 1- 4-15-1 1- 1- 5-1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
NO.	- 00	4 r0	8 × 8 0 0	1121

NOTES: DEVELOPMENT GRADE: TYPE OF PLANTS:

0 - EXISTING
1 - UNDER CONSTRACTION
2 - GEOTEF
2 - COMMITTED
3 - R-0-R

NO.	D NO.	ID NO. NAME OF PLANTS	DEVEL.	PLANT C	COMIS.	CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK
11111	11111	ISABELA 3 ISAGELA 1+2 BATAAN 2 BATAAN 1 MANILA 1	ппооо	44៧៧៧	1994 1993 1972 1965	100000. 100000. 150000. 75000.	- 0	0.700 0.700 0.470 0.470	LUZON GRID LUZON GRID LUZON GRID LUZON GRID
1111		MANILA 2 SUCAT 1 SUCAT 2 SUCAT 3 SUCAT 4	00000	សសសសល	1966 1968 1970 1971	100000. 150000. 200000. 200000. 300000.		0.470 0.470 0.470 0.470	LUZON GRID LUZON GRID LUZON GRID LUZON GRID
	1	MALAYA 1 MALAYA 2 MAK-BAN 3-4 MAK-BAN 1-2 MAK-BAN 5-5 CALACA 1 BACON MANITO TIW!	00000 NONO	m 80000 - 4400	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	300000. 55000. 55000. 55000. 300000. 55000.		0.470 0.730 0.730 0.700 0.700 0.700 0.700	LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	GEO-THERMAL 1 GEO-THERMAL 2 GEO-THERMAL 3 GEO-THERMAL 4 COAL THERMAL 1 COAL THERMAL 2 COAL THERMAL 2	ញ លល់ល់ង់ ភេជ	N NNN44 44	1995 2003 1998 2000 2000 2000 2000 2000	\$5000. \$5000. \$5000. \$00000. \$00000. \$00000.	ወ' ውውው~ ~~	0.730 0.730 0.730 0.700 0.700 0.700	LUZON GRID
K 5 5 8 8 6 8		NOTES: DEVELOPMENT GRADE: NOTES: DEVELOPMENT GRADE: 0 = EXISTING 1 - UNDER CON 2 - COMMITTED 9 - CANDIDATE	E 63	TRACTION OF FIXED	TRACTION OF FIXED INST. YEAR	8 O 8 U 8 O 9 5-	PLANTS: R-O-R FOR R-O-R FOR	ANTS: R-O-R FOR BASE LOAD GEOTERMAL R-O-R FOR DAILY PEAKING COAL FIRED HYDRO WITH RESERVOIR TYPE DIESEL GAS TURBINE	DAD PEAKING VOIR TYPE

RESULTS OF PRIORITY RANKING STUDY

CALCULATION CASE: 1 Discount RATE : 0.12 COST ESCALATION : 1.00

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	ů.	PROJECT 1 D		TY PE	NAME OF PROJECT	INSTALLED CAPACITY	ASSUMED MAXIMUM P.F.	C O CAPITAL	S T OPERATION	1/ STAGE DEVELOP. INDEX	PRE- CEDING	PRE-CON- STRUCTION LEAD TIME	CONST RUCTION
i 1 1		! ! !		i	1		(MM)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CMIL US\$5	(MIL US\$)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	 	(YEARS)	(YEARS)
-	•	<u>;</u>	-	,	ω	SAN ROQUE	330.0	0.32	409.2	6.1	O	0	4	Ŋ
64	8	Ļ	1.	-	ø	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	ഗ
ო	m	_	1		ယ	MATUNO	180.0	0.30	267.0	4.0	0	0	4	ιņ
4	4	<u>+</u>	Ļ	-	9	BINONGAN	175.0	0.41	269.2	4.0	0	o	4	ហ
ທ	ល	1	-		ထ	CH1 CO-4	360.0	0.23	534.9	8.0	0	0	N	ស
ω	9	; ;	Ļ	_		GENED	600.0	0.24	801.5	12.0	O	0	4	ល
~	~	Ļ	1.	***		AGOS	140.0	0.44	361.4	ਨ 4.	0	0	4	ស
æ		<u>.</u> .	Ļ		9	BALOG-BALOG	33.0	0.27	39.9	9.0	o	o	₹	4
o,	თ	Ļ	7	,		PALSIGUAN .	42.0	0.50	173.1	5.6	0	o	4	រភ
10	0	! ~	-	F		ETEB	107.2	0.30	225.8	3.4	0	o	ø	ល
=	ç	<u>;</u>	<u>.</u>	•-	ø	SISIRITAN	417.6	0.26	610.5	9.5	0	٥	9	ហ
12	=	<u>+</u>	<u>;</u>	٠.,	ø	AGBULU	216.2	0,31	403.0	6.0	0	0	Q	ເດ
	12	<u>,-</u>	+	_		SADANGA ALT	299.4	0.28	600.1	0.6	0	0	9	ເກ
4	13	-			ę	TABU	138.6	0.31	312,2	4.7	0	0	9	ល
5	14	<u>_</u>	<u>-</u>	-		UP. AGOS-2	135.4		285.2	4.3	0	0	Q	Ŋ
16	10	1	<u>t</u>		ဖ	WAWA	61.0	0.37	175.2	5,6	٥	o	Q.	ເດ
17	16	1		N	-	NAGUILIAN	36.9	0.35	48.5	0.7	0	o	9	4
7.8	17		<u></u>	N	 -	LUYA	40.8	0.35	60,3	6.0	0	o	9	4
5	£ 8	1	<u>+</u>	N	+	BAKUM	33,0	0.35	35.4	0.5	o	0	ø	4
50	<u>0</u>	;	1	N	,-	AMBURAYAN	64.0	0.34	75.4	.,	0	0	ω	4
21	20	Ļ	1	N	,-	ABRA	10.9	0.41	21.5	0.3	0	0	တ	4
22	77	ŗ.	-	N	-	APAYAO	S	0.46	39.4	9.0	0	0	Ф	4
23	22	+		N	-	CHICO-1R	27.3	0.46	40.7	9.0	0	0	တ	4
24	7	1			-	CH1CO-2R	34.5	0.46	43.3	9.0	0	0	ιo	4
. 25	23	<u>.</u>	<u></u>	N	-	SALTAN	12.6	0.46	25.2	4.0	0	Ö	ω	4
26	24	-	<u></u>	N	-	PASIL	20,2	0.46	30.0	0.4	0	Ġ	ω	4
27	25	-		N		TANUDAN	24.8	0.46	34.0	0.5	0	o	9	4
28	56	1-			-	IBULAO	16.3	0.44	29,3	0.4	0	0	9	4
58	27	ļ ,,,,	-	Ø	-	CASECNAN	11.5	0.46	28.1	4.0	0	0	9	ų.
30	28	-	1		\$-13	UP. CASECNAN	12.4	0.46	31.6	0.5	o	O	ω	4
31	23	1	<u>,,,</u>	N		AGNO-2	10.9	0.47	24.5	4.0		0	w	4
32	30	-	<u>.</u>	_	,	AGND-3	ច ទ	0.48	21.9	e 0	0	0	Q	4
!	; ; ; !		1	1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1	+ + + + + + + + + + + + + + + + + + + +				!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

LIST OF SCREENED PROJECTS

			FOR		-4047	NAX TAIR		- 1	100000
NO NO	N A M E	TYPE	YEAR	YEAR	C1TY (MW)	E	CAP(TAL (MIL US\$)	OPERATION (MIL US\$)	WORTH WORTH CMIL US\$
γαn	STUDY AREA : 1- 1	LUZON	LUZON GRID.						
1	!!!								
<u></u>	GEO-THERMAL 1	Ŋ	1996	ı	330.0	0.73	495.0	16.5	203.0
	MATUNO	ıø	1997	ı	180.0	0.30	267.0	4.0	90.9
03	COAL THERMAL	**	1998	1	300.0	0.70	360.0	42.1	167.4
	GEO-THERMAL 2	cı	1999	ı	330.0	0.73	495.0	15.5	144.0
	COAL THERMAL	2	2000	1	300.0	0.70	360.0	42.1	133.4
90	GEO-THERMAL 3	cv	2001	,	330.0	0.73	495.0	16.5	115,2
	COAL THERMAL	6.0 A	2002	1	600.0	0.70	720.0	84.3	212.7
£0	GEO-THERMAL 4	N	2003	ı	330.0	0.73	495.0	16.5	91.8
9	COAL THERMAL	च प	2004	1	300.0	0.10	350.0	42.1	84.8
0	SAN ROQUE	6	2005	•	390.0	0.32	409.2	9	56.2

SYSTEM NAME: LUZON HPPS AREA 1D : 1- 1

PARAMETERS FOR THE DISCOUNTING TECHNIQUE

SASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON PLANNING HORIZON : 2035
RESERVE CAPACITY : 0

CALCULATION COMBINATION

DISCOUNT RATE COST ESCALATION

1.00

0.12

CASE D-5

13-37

RVE	ENERGY (GWH)	14148.0 14714.0 15303.0 15914.0	17213.0
DEMAND CURVE	3	 	2807.0
	YEAR	တကကက	1990

31002.0	8085.0	005
23810.0		†
28663.0	674.	600
51.	4.	200
S,	4321.0	100
25481.0	4155.0	000
501.	3895.0	37
558	3842.0	G
652.	3694.0	O
-	552.	986
20943.0	4	ന
20138.0	3284.0	994
353.	3158.0	Ç1
618	3036.0	S
302	2919.0	991
	2807.0	Ó

* TABLE OF EXISTING - HYDRO POWER PLANTS *

;	i I											
DEVEL. TYPE COMIS. INSTALL GENERATED PLANT NO.OF REWARK: GRADE PLANT YEAR CAPACITY ENERGY FACTOR UNIT (MW) (GWH)	EXISTING COMMITTED, POWER UP IN PANTABANG								•	EXISTINGE PUMPED STORAGE		
NO.OF REMARK :	EXISTING COMMITTED.	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	COMMITTED	EXISTING	EXISTING	EXISTINGE P	EXISTING	EXISTING
40.07 50.17	40		~	-	6	4		4	m m	N	<u>-</u>	τ-
PLANT NO.O FACTOR UNIT	0.26	0.26	0.26	0.26	0.26	0.26	0.76	0.26	0.26	0.26	0.26	0.26
GENERATED PLANT ENERGY FACTOR (GWH)	814.40	515.70	226.20	27.10	169.70	226.20	154.00	72.40	38.50	678.60	4.10	0.90
INSTALL CAPACITY (MW)	360.00 268.00	228.00	100.00	12.00	75.00	100,00	23.00	32.00	17.00	300.00	1.80	0.40
COMIS.	1983 1995	1967	1977	1981	1956	1960	1993	1945	1948	1983	1957	1959
TYPE	ဖဖ	y	ø	φ.	۵	. 9	9	ဖ	9	9	ý	ω
DEVEL, TYPE GRADE PLANT	0 0	ø	0	٥	o	o	8	0	o	O	0	0
	AGAT CASECNAN TBD	ANGAT	PANTABANGAN	MASI NAY	AMBUKLAO	BINGA	PANTAI	CALIRAYA	BOTOCAN	KALAYAAN	BUHI-BARIT	CAWAYAN
. DN G1	1- 1- 2- 8-1 N	- 3-25-3	- 3-25-4	- 3-25-5	3-77-1	- 3-77-2	- 4- 7-4	- 4-15-1	1- 1- 4-15-2	- 4-15-3	- 5-48-1	1- 1- 5-91-2
닯			-1	1- 1-	<u>-</u>	1	<u>-</u>	1-	1	<u>.</u>	1	<u>;</u>
ON.	N	r)	4	ហ	ø	~	80	တ	0	g	12	ن

DEVELOPMENT GRADE: NOTES:

0 - EXISTING 1 - UNDER CONSTRACTION 2 - COMMITTED

TYPE OF PLANTS:

1 - R-O-R FOR BASE LOAD
2 - GEOTERMAL
3 - R-O-R FOR DAILY PEAKING
4 - COAL FIRED
5 - OIL FIRED
6 - HYDRO WITH RESERVOIR TYPE
7 - DIESEL
7 - GAS TURBINE

TD NO.	NAME OF	PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK
	ISABELA 1-2 ISABELA 3 BATAAN 1 BATAAN 2 MANILA 2	~ m _ ~ a a	ииооо	44ស្សស	1993 1994 1972 1977	100000. 100000. 75000. 150000.	(V) yee gar yee ye	0.700 0.470 0.470 0.470	LUZON GRID LUZON GRID LUZON GRID LUZON GRID
	SUCAT 2 SUCAT 2 SUCAT 1 SUCAT 4	_	00000	លលល់លាល	1965 1970 1968 1972	100000 200000 150000 300000	يدي وسو يدو يدي سي	0.470 0.470 0.470 0.470	LUZON GRID LUZON GRID LUZON GRID LUZON GRID
	MALAYA 2 MALAYA 1 MAK-BAN 1-2 MAK-BAN 3-4 MAK-BAN 5-6 CALACA 1 CALACA 2 SACON MANITO TIWI GEO-THERMAL GEO-THERMAL GEO-THERMAL	2 1 1-2 3-4 5 5-6 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	୦୦୦୦୦ ତ ୍ୟର୍ବ ନ୍ଦ୍ର	ымичи здини ини	1979 1979 1979 1980 1984 1992 1991 1979 1996 2003 2003	350000 550000 550000 550000 55000 55000 55000 55000 55000		0.470 0.470 0.730 0.730 0.730 0.730 0.730 0.730 0.730	LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID LUZON GRID
- L-	COAL TI COAL TI COAL TI COAL TI	THERMAL 1 THERMAL 1 THERMAL 3 DEVELOPME	24 1- 1-89-99-2 COAL THERMAL 2 9 4 2001 25 1- 1-69-99-1 COAL THERMAL 1 9 4 1998 26 1- 1-89-99-3 COAL THERMAL 3 9 4 2004 26 1- 1-89-99-3 COAL THERMAL 3 9 4 2004 26 1- 1-89-99-3 COAL THERMAL 3 9 A 2004 26 1- 1-89-99-3 COAL THERMAL 3 9 A 2004 27 1- 1-89-99-1 COAL THERMAL 3 9 A 2004	4 4 4 9 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	2001 1998 2004	## ## ##	1 0. 1 0. 1 1.	0.700	LUZON GRID LUZON GRID LUZON GRID GREGANEGRAGE
) - N 0)	- EXISTING - UNDER CONSTRACTION - COMMITTED - CANDIDATE OF FIXED	STRACTIC OF FIXE	CTION FIXED INST.	YEAR	1 - R-O-R FOR 2 - GEOTERMAL 3 - R-O-R FOR 4 - COAL FIRED 5 - OIL FIRED 7 - DIESEL 8 - GAS TURBII	R-O-R FOR BASE LOAD GEOTERMAL R-O-R FOR DAILY PEAKING COAL FIRED OIL FIRED DIESEL GAS TURBINE	OAD PEAKING VO!R TYPE

CALCULATION CASE: 1 DISCOUNT RATE : 0.12 COST ESCALATION : 1.00

LIST OF CANDIDATE PROJECTS

٠					٠			ASSIMED	C C		1/ STAGE	/ 2/ PRE-	- KOO - 2384	CONST
SER.	PLANT		PROJECT				INSTALLED	MAXIMUM			DEVELOP, CEDING	CEDING	STRUCTION	RUCTION
Š.	92	- - ,	a	É	TYPE	NAME OF PROJECT	CAPACITY (MW)	ι. Δ.	CAPITAL (MIL US\$)	OPERATION (MIL US\$)	NDEX	PLANT	LEAD TIME (YEARS)	PERIOD (YEARS)
	1 1 1 1 1			ĺ	1	#	E E E E E E E E E E E E E E E E E E E	1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	 	! ! ! !	1		
-	+	1	1		ω ω	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	ហ
N	N	1	<u>.</u>		9	DIDUYON	352.0	0.29	469.2	7.0	0	o	4	ហ
n	ო	I,	<u>.</u>		9	MATUNO	180.0	0.30	267.0	4.0	o	0	4	ហ
4	4	1	<u>,</u>		9	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	Ŋ
ທ	'n	<u>:</u>	Ļ			CH1C0-4	360.0	0.23	534.9	8.0	0	0	8	ភេ
ø	ώ	!	<u>.</u>	_		GENED	600.0	0.24	801.5	12.0	0	o	4	ຄ
1~	۲			_		AGOS	140.0	0.44	361.4	გ. 4	o	0	4	ເກ
×	ø	-	1			BALOG-BALOG	33.0	0.27	39.9	9.0	0	0	4	4
თ	m	-	<u>.</u>	_		PALSIGUAN	42.0	0.50	173.1	9.8	0	0	4	ល
10	9	1	<u>.</u>			SUPO	141.8	0.32	258.0	თ თ	0	o	ø	ល
-	0	1				ETEB	107.2	0.30	225.8	9. A	0	0	w	w
12	9	-	<u>;</u>	_	10	SISIRITAN	417.6	0.26	610.5	9.2	0	0	ဖ	ហ
(7)		-	;			AGBULU	216.2	0.31	403.0	0.9	0	۵	ဖ	ស
14	7	<u>!</u>	<u>.</u>	_		SADANGA ALT	299.4	0.28	600.1	о. 6	0	0	y	V)
ī,	<u></u>	i	ì	_		TABU	138.6	0.31	312.2	4.7	o	0	φ	ល
3	4	ļ	1		ø	UP. AGOS-2	135.4	0.36	285.2	4 6.	0	0	so.	ល
1.7	ហ	<u>!</u>	<u>+</u>	۲-	ဖ	WAWA	61.0	0.37	175.2	2.6	o	٥	Q	យ
80	5	1	1	2	-	NAGUIL! AN	36.9	0.35	48.5	0.7	0	o	ဖ	4
0	17		ŗ	8	-	LUYA	40.8	0.35	60.3	0.9	0	o	ω	4
20	100	-	-	~		BAKUM	33.0	0.35	35.4	o.5	0	ဗ	w	4
2	6	-	<u> </u>	N		AMBURAYAN	64.0	0.34	75.4	-	0	o	ω	4
22	20	Ļ	<u>;</u>	~	_	ABRA	10.9	0.41	21.5	o.3	0	o	ഗ	**
23	23		Ļ	N	_	APAYAO	15.8	0.46	39.4	9.0	0	Ó	ဖ	4
24	22	<u></u>	Ļ	N		CH I CO-1R	27.3	0.46	40.7	9.0	0	0	S	4
25	7.	<u></u>	1	~		CH1CO-2R	34.5	0.46	43.3	9.0	0	0	9	4
26	23	<u>_</u>	<u>.</u> .	c)	.	SALTAN	12.6	0.46	25.2	٥.	0	٥	w	4
27	24	Ļ	,_	8		PASIL	20.2	0.46	30.0	4.0	0	O	9	4
28	25	<u>,</u>	,	0	_	TANUDAN	24.8	0.46	34.0	0,5	۵	o	ဖ	4
5	56	-	<u>.</u>	01	-	1801.40	16.5	0,44	29.3	4,0	o	Ö	9	4
30	27	<u>.</u>	Ļ	N	,-	CASECNAN	11.5	0.46	28.1	4.0	o	O	မ	4
. E	28		-	0	-	UP. CASECNAN	12.4	0.46	31.6	o.5		o	ιo	4
8	60	<u>, </u>		~	.	AGNO-2	10.9	0.47	24.5	4.0	o	o	ဖ	ঝ
i e7	0 1 m	<u> </u>	!	N	-	AGNO-B	9.5	0.48	21.9	හ. ග	0	o	ထ	4
) !	; ; ; ; ;	. 1	1			2		1 1 1 1 1 1 1			11111111	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 1 1 1 1 1 1 1

LIST OF SCREENED PROJECTS

			16			ASSOCIATED ASSOCIATION AND ASSOCIATION ASSOCIATION AND ASSOCIATION	n >	-	
NO.	M M	7YPE	KAR.	YEAR.	CITY	7. T.	CAPITAL (MIL US\$)	OPERATION (MIL US\$)	WORTH (MIL US\$)
TUDY	STUDY AREA : 1- 1	LUZON GRID	GRID						
0	GEO-THERMAL 1	61	1996	ŧ	330.0	0.73	495.0	16,5	203.0
02	COAL THERMAL	4	1998	ı	300.0	0.70	350.0	42.1	167.4
60	BINONGAN	G	1000	1	175.0	0.41	269.2	4.0	73.1
4	GEO-THERMAL 2	84	2000	ı	330.0	0.73	495.0	16.5	129.0
05	COAL THERMAL	2	2001	•	300.0	0.10	360.0	42.1	119.1
90	GEO-THERMAL 3	N	2002	1	330.0	0.73	495,0	16.5	102.8
70	TANUDAN	-	2002	•	24.8	0.46	34.0	0.5	6.1
0.3	GEO-THERMAL 4	04	2003	,	330.0	0.73	495.0	15.5	91.8
60	COAL THERMAL	.*	2004	1	300.0	0.70	360.0	42.1	34.0
0	SAN ROOVE	9	2002	ı	390.0	0,32	409.2	6.1	56.2

SYSTEM NAME: LUZON HPPS AREA 1D : 1- 1

PARAMETERS FOR THE DISCOUNTING TECHNIQUE

SASE YEAR : 1985
YEAR ON INVESTMENT HORIZON : 2005
YEAR ON FLANNING HORIZON : 2035
RESERVE CAPACITY : 0.

CALCULATION COMBINATION

DISCOUNT RATE COST ESCALATION

0.12

1.00

CASE D-6

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LUZON GRID

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Ω	1

11111111		
EA	O:	ENERGY (GWH)
30.0	1 6	
7 (6 : 2 : 2 :	_
ξ Σ	400,	714.
ø	496.	303.
1988	2595.0	914
40	639.	
1990	807.	67
9	919.	7902.
1992	3036.0	18618,0
9	53.	363.
1994	84.	138.
1995	ίυ.	943.
O	52.	781
1997	94.	652.
O	**	55.00
1999	3995.0	24501.0
2000	55,	25481.0
2001	4321.0	
2002	4494.0	27561.0
2003	674.	8563.
2004	61.	9810.
2005	5055.0	31002.0
,	9440441141141844144	* 9 6 4 6 1 6 7 8 7 8 7 8 8 8 8 8 8 8 8

	равлячительного при	POWER UP IN PANTABANG										PUMPED STORAGE		
NO.OF REMARK : UNIT	EXISTING	_	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	COMMITTED	EXISTING	EXISTING		EXISTINGE PUM	EXISTING	EXISTING
UN U	8 8 4 8	m	۲-	N		n	4	N	4	ო		8		.
PLANT NO.O FACTOR UNIT	0.26	0.59	0.26	0.26	0.26	0.26	0.26	0.76	0.26	0.26		0.26	0.26	0.26
GENERATED ENERGY (GWH)	514.40	1379.00	515.70	226.20	27.10	169.70	226.20	154.00	72.40	38.50		678.60	4.10	06.0
INSTALL CAPACITY (MW)	360.00	268.00	228.00	100.00	12,00	75.00	100.00	23,00	32.00	17,00		300.00	1.80	0.40
COMIS. YEAR	1989	1995	1967	1977	1981	1956	1960	1993	1945	1948		1983	1957	1959
TYPE	9	s	ų	9	9	ø	9	9	φ	9		9	ø	ω
DEVEL, TYPE COMIS. GRADE PLANT YEAR	5 5 6 9 9	61	0	٥	Q	0	0	N	0	0		0	0	0
S		CASECNAN TBD	ANGAT	PANTABANGAN	MASIWAY	AMBUKLAO	BINGA					KALAYAAN	BUHI-BABIT	CAWAYAN
.0 0 0		1- 1- 2- 8-2	3 1- 1- 3-25-3 ANGAT	1- 1- 3-25-4	1- 1- 3-25-5	1- 1- 3-77-1	1-1-3-77-2	1- 1- 4- 7-4	1- 1- 4-15-1	1-1-4-15-2		1- 4-15-3	1- 5-48-1	2-16-21-1
NO.		~	'n	4	ស	ø	۲-	5 3	o	5	-	***		1 69

NOTES; DEVELOPMENT GRADE:

0 - EXISTING

1 - UNDER CONSTRACTION

2 - COMMITTED

3 - R-O-R

1 - R-O-R FOR BASE LOAD
2 - GEOTERMAL
3 - R-O-R FOR DAILY PEAKING
4 - COAL FIRED
5 - OIL FIRED
6 - HYDRO WITH RESERVOIR TYPE
7 - DIESEL
8 - GAS TURBINE

PLANT FACTOR	O TOO NOTE: OOT O	10401	L0202	ביסלח.	0.470 LUZON GRID	0.470 HOTH CO. 1	10408		10208		0.470 G211		10202 1170N	10202 10701	0.730 LUZON GRID	0.700 KOZU 1		LUZON	LUZON	0.730 LUZON GRID	0.730 LUZON GBID	LUZON	LUZON	LUZON	
UNIT NO.OF CAPACITY UNIT (KW)	100000,	100000	150000	75000	1000001	100000	150000	200000	200000.	300000. 1	300000	350000.	55000. 2	55000. 2	55000, 2	300000,	300000	55000, 2	55000. 6	55000, 6	55000. 6	55000	55000	300000	000000
COMIS.	1994	1993	1977	1972	1955	1966	1968	1970	1971	1972	1974	1979	1980	1979	1984	1992	1984	1991	1979	1996	1998	2001	2002	2000	2000
DEVEL. PLANT GRADE TYPE	ν 4	77	0	ເກ O	s 0	ιο O	හ 0	0	ιΩ (Ο	c)	9	დ 0	0	0	0 8	7	4	23	0	6	8	3		ω *	4
NAME OF PLANTS 0	SASELA 3	SABELA 1-2	BATAAN 2	BATAAN 1	MANILA 1	MANILA 2	SUCAT 1	SUCAT 2	SUCAT 3	SUCAT 4	MALAYA 1	MALAYA 2	MAK-BAN 3-4	MAK-8AN 1-2	MAK-BAN 5-6	CALACA 2	CALACA 1	BACON MANITO	1.8.1	GEO-THERMAL 1	GEO-THERMAL 2	GEO-THERMAL 3	GEO-THERMAL 4	COAL THERMAL 1	COA! THEBMA! 2
- D NO.	7 .2	1- 2-	1- 1- 3- 1-2	1- 1- 3- 1-1	1- 1- 4- 1-1	1- 1- 4- 1-2	1- 1- 4- 2-1	1- 1- 4- 2-2	1- 1- 4- 2-3	1- 1- 4- 2-4	1- 1- 4- 3-1	1- 1- 4- 3-2	1- 1- 4- 4-2	1- 1- 4- 4-1	1- 1- 4- 4-3	1- 1- 4- 5-2	1- 1- 4- 5-1			1-88-88-1	1- 1-88-88-2	1-1-88-38-3	1- 1-88-88-4	1-68-88-1	2-88-11-1
S O O	,	CV)	ო	4	ν	S	~	æ)	თ	2	=	2	~	*	ល	16	<u></u>	9) 9)	02	20	2	25	g	24	ដ

· 国内克勒拉斯 医甲基苯酚 医多种氏虫虫 医克勒氏氏征 医克勒氏氏征 医克勒氏征 医克勒氏征 医克勒氏征 医克勒氏氏征 医多种性皮肤 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性 医多种性	TYPE OF PLANTS:	1 - R-O-R FOR BASE LOAD	2 - GEOTERMAL	3 - R-O-R FOR DAILY PEAKING		5 - OIL FIRED	6 - HYDRO WITH RESERVOIR TYPE	7 - DIESEL	8 - GAS TURBINE
				•	YEAR				
2 1 0 0					NST.				
有可用的工作的现在分词 医克里斯氏征 医克里氏征 医原生 医原生 医原生 医原生性原生 医原生性原生性原生性原生性原生性原生性原生性原生性原生性原生性原生性原生性原生性原	DEVELOPMENT GRADE:	O - EXISTING	1 - UNDER CONSTRACTION	2 - COMMITTED	9 - CANDIDATE OF FIXED INST. YEAR				
· · · · · · · · · · · · · · · · · · ·	NOTES:								

RESULTS OF PRIORITY RANKING STUDY

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CALCULATION CASE: 1 DISCOUNT RATE : 0.12 COST ESCALATION : 1.00

LIST OF CANDIDATE PROJECTS

PRE-CON- CONST- STRUCTION RUCTION LEAD TIME PERIOD: (YEARS) (YEARS)	4 4 W FU	4 4 RU (U)	W. W	ን የን	4 1	4+ u	,	-		- •	மைய		n 4	7 1	· \	. 4	4	4	3	4	4	5	0 4	9	4	φ ·	δ 4	6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
	00	00	00	,	0	00	3 0	0	0	0	0 (D (0 0	> (o c	o c		0	o	o	0	O	0	0	0	0	O	0
STAGE PRE- DEVELOP.CEDING INDEX PLANT	00	00	00		o	0 0	.	. 0	0	0	φ.	ο,	0 (.	.	.) C	, o	0	0	o	o	0	ø	0		0	0
S T OPERATION	7.0	4 4	ε (Ο (์ ภ.ช ว. 4.	9.0	9 0	n 4	9.5		0.0	4.	4 w	67 (64 (2.0	, u	n -	. c	9 0	9	9.0	4.0	4,0	3.5	4,0	4,0	0.5	4.0	6.0
CAPITAL (MIL US\$)	4 09 . 2 2 . 2 . 2	267.0	534.9	361.4	39,9	173.1	258.0 228.0	610.5	403.0	600.1	312.2	285.2	175.2	4. ອີ	60.00 6.00	2 . v			40.7	. 60	25.00	0.00	34.0	29.3	28.1	31.6	24.5	21.9
ASSUMED MAXIMUM P.F.	0.32	0,30	0.23	0.24	0.27	0,50	2 C	0.26	0.31	0.28	0.31	0.36	0.37	0.35	0.9S	9.00	, c	- 4 - 4	27.0	9 4	. 6	0.46	0.46	0.44	0.46	0.46	0.47	0.48
INSTALLED CAPACITY (MW)	390.0	180.0	360.0	140.0	33.0	42.0	141.6	417.6	216.2	299.4	138.6	135,4	61.0	36.9	φ. 6 8 . 6	0. vg		. v	0.70	9 KG		20.2	24.8	16.5	11.55	12.4	10.9	හ.
NAME OF PROJECT	SAN ROQUE	MATUNO	CHI CO-4	GENED	BALOG-BALOG	PALSIGUAN	SUPO	ries Sistrian	AGBULU	SADANGA ALT	TABU	UP. AGOS-2	WAWA	NAGUILIAN	LUYA	ваким	AMBURAYAN	ABRA	ATX: X0	CH CO 18	C#1 CO 182	0 00 00 00 00 00 00 00 00 00 00 00 00 0	TANIDAN	BULAO	CASECNAN	UP CASECNAN	AGNO-2	AGNO-3
TYPE	50	o io c	oφ	œψ	9	ø	மை	o «	φ	ω.	ß	ശ	ø	, _	. -	-		, ,	- •	,	-,				-			
		 : 1		۰. زاز					- <u>-</u>			1-1		1 2	7. 2	1 2	7	Ν. 1.	N (1 (1 ,	1 .	1 1	1 0	1 0			1.4
PROJECT I D		- -	<u> </u>	<u>.</u>		<u>.</u>	٠.	į į			-	1	1	<u>+</u>		<u>i</u>	<u>:</u>	i ,	<u>!</u> ,	;	<u>.</u> ,	1 .	! - •		<u> </u>	. <u>!</u>	!	. ‡
PLANT NO.		ימי	ល៖	4 0	- e0	6	0 9	0 4	-	. 2	G	4	ī	16	17	<u>∞</u>	6	50	7 1	77 (12	9 4	יי ר זיי	3 4	2 4	4 C	3 6	900
SER.		V 69 V	4 ro	4 6	⊶ ed	6	0	- 5	4 17	4	5	9	<u>~</u>	80	6	20	21	22	. K	24	S S	19 19	N 6	9 0	9 6	, ,		9 69

LIST OF SCREENED PROJECTS

	YEAR				
AREA: 1- 1 LUZON GRID GEO-THERMAL 1 2 1996 - 330.0 0.73 GEO-THERMAL 2 2 1998 - 330.0 0.73 AMBURAYAN 1 1999 - 64.0 0.73 GEO-THERMAL 1 4 2000 - 300.0 0.70 GEO-THERMAL 3 2 2001 - 330.0 0.73 CHICO-ZR 1 2 2001 - 34.5 0.46 GEO-THERMAL 4 2 2002 - 330.0 0.73 PALSIGUAN 6 2002 - 42.0 0.50	(MM)	MAX18008	CAPITAL OPER	OPERATION (MIL US\$)	WORTH (MIL US\$)
GEO-THERMAL 1 2 1996 - 330.0 0.73 GEO-THERMAL 2 2 1998 - 330.0 0.73 AMBURAYAN 1 1999 - 64.0 0.73 COAL THERMAL 1 4 2000 - 300.0 0.70 GEO-THERMAL 3 2 2001 - 330.0 0.73 GEO-THERMAL 4 2 2002 - 330.0 0.73 PALSIGUAN 6 2002 - 42.0 0.50					; ; ; ; ; ; ; ;
GEO-THERMAL 2 2 1993 - 330.0 0.73 AMBURAYAN 1 1995 - 64.0 0.34 COAL THERMAL 1 4 2000 - 300.0 0.70 GEO-THERMAL 3 2 2001 - 330.0 0.73 GEO-THERMAL 4 2 2002 - 330.0 0.73 PALSIGUAN 6 2002 - 42.0 0.50	1	0.73	495.0	16.5	203.0
AMBURAYAN 1 1995 - 64.0 0,34 COAL THERMAL 1 4 2000 - 300.0 0,70 GEO-THERMAL 3 2 2001 - 330.0 0,73 CHICO-2R 1 2001 - 34.5 0,46 GEO-THERMAL 4 2 2002 - 330.0 0,73 PALSIGUAN 6 2002 - 42.0 0,50		0,73	495.0	16.5	161.8
COAL THERMAL 1 4 2000 - 300.0 0.70 GEO-THERMAL 3 2 2001 - 330.0 0.73 CHICO-2R 1 2001 - 34.5 0.46 GEO-THERMAL 4 2 2002 - 330.0 0.73 PALSIGUAN 6 2002 - 42.0 0.50	•	0,34	75.4		13,1
GEO-THERMAL 3 2 2001 - 330.0 0.73 CHICO-2R 1 2001 - 34.5 0.46 GEO-THERMAL 4 2 2002 - 330.0 0.73 PALSIGUAN 6 2002 - 42.0 0.50	1	0,70	360.0	42.1	133.4
CHICO-2R 1 2001 - 34.5 0.46 GEO-THERMAL 4 2 2002 - 330.0 0.73 PALSIGUAN 6 2002 - 42.0 0.50	,	0,73	455.0	36.5	115.2
2 2002 - 330.0 0.73 6 2002 - 42.0 0.50	1	0,46	£3,3	9.0	8.1
\$ 2002 - 42.0 0.50	1	0.73	495.0	16.5	102.8
	,	0,50	173.1	2,6	33.4
6 2003 - 390.0 ,0.32	•	,0.32	409.2	6,1	70.5
MAL 2 4 2004 - 600,0 0,70		0.70	720.0	54,3	169.6





