HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 2-008-20-46-0-2

SCHEME : IBULAO
RIVER SYSTEM : CAGAYAN
STREAM : IBULAO

WATER RESOURCES REGION : II
PROVINCE : IFUGAO
CATCHMENT AREA (KM2) : 159.1

COORDINATES : N16-46-19 E120-59-29
STUDY LEVEL : NEWLY IDENTIFIED THROUGH LHPPS

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RUN-OF-RIVER							
PLANT FACTOR ASSUMED	: 0.50	DEVELPM'T RATIO	: 0.64					
NO. OF SUB FACILITIES	: SUBDAM ; 0	INTAKE	; 1	SADDLE DAM	; 0			
RESERVOIR								
LEVELS (EL.M)	: FSL ; 813.7	MOL	: 813.0	AVE. OPERATING LEVEL	; 813.4			
STORAGE (MIL M3)	: GROSS ; 0.1	ACTIVE	; 0.0	DEAD	; 0.1	SEDIMENT	: -	
MAIN DAM/WEIR								
TYPE	: INTAKE GATED	CREST EL (M)	: 818.7	CREST LENGTH (M)	: 42.0			
DAM HEIGHT (M)	: 6.7	DAM VOL (1000M3)	: 4.0	GEOLOGICAL CLASS	: GOOD			
SPILLWAY								
TYPE	: NON	CREST EL. (M)	: -	OVERFLOW WIDTH(M)	: -			
DESIGN FLOOD(M3/S)	: -	GATES (TON)	: -	GATE DIMENSION(M)	: -			
WATERWAY								
HEADRACE TYPE	: NON-PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	: 7690.0	DIA.(M)	: 2.4	
H/R SURGETANK TYPE	: HEAD TANK	NUMBER	: 1	CONDUIT LENGTH(M)	: 400.0	DIA.(M)	: 1.2	
PENSTOCK TYPE	: OPEN-AIR	NUMBER	: 1	LENGTH (M)	: 450.0	DIA.(M)	: 1.5	
		STEEL LINER(TON)	: 113.					
TAILRACE TYPE	: BAY/CHANNEL	NUMBER	: 1	CONDUIT LENGTH(M)	: 30.0	WIDTH(M)	: 30.7	
POWERHOUSE								
TYPE	: OPEN AIR	SPACIAL VOL.(M3)	: 10230.					
POWER EQUIPMENT								
TYPE	: PELTON	NO. OF UNITS	: 3	UNIT CAPACITY (MW)	: 6.1			
TRANSMISSION								
SUBSTATION	: SOLANO	NO. OF CIRCUITS	: 1	LENGTH (KM)	: 42.0	K V	: 69S	
ACCESS ROAD								
LENGTH (KM)	: 14.2	FROM NEAREST NATIONAL ROAD						
LAND/RESETTLEMENT								
LAND SUBMERGED(HA)	: 0.							

POWER

INSTALLED CAPACITY (MW)	: 16.5	MIN. GUARANT(MW)	: 1.4	FIRM POWER (MW) : 1.5
ANNUAL TOTAL ENERGY(GWH)	: 85.1	FIRM ENERGY(GWH)	: 13.0	SECOND.ENERGY(GWH) : 72.1
MAX. DISCHARGE(M3/S)	: 7.8	FIRM DISC.(M3/S)	: 0.7	
MAX. STATIC HEAD (M)	: 273.7	AVE. NET HEAD(M)	: 257.7	TAILWATER LEVEL(M) : 540.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 29.27	POWER DEVELOP.	: 23.78	TRANSMISSION	: 1.60
TOTAL COST/KW (USD/KW)	: 1777.02	ACCESS ROAD	: 3.88	LAND/RESETTLEMENT	: 0.01
TOTAL COST/KWH(USD/KWH)	: 0.46				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.077

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 2-008-29-58-0-2

SCHEME : CASECNAN
RIVER SYSTEM : CAGAYAN
STREAM : CASIGNAN

WATER RESOURCES REGION : II
PROVINCE : QUIRINO
CATCHMENT AREA (KM2) : 286.4

COORDINATES : N16-03-21 E121-16-45
STUDY LEVEL : NEWLY IDENTIFIED THROUGH LHPPS

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RUN-OF-RIVER								
PLANT FACTOR ASSUMED	: 0.50		DEVELPM'T RATIO	: 0.66					
NO. OF SUB FACILITIES	: SUBDAM : 0		INTAKE	: 0		SADDLE DAM	: 0		
RESERVOIR									
LEVELS (EL.M)	: FSL : 548.2		MOL	: 546.8		AVE. OPERATING LEVEL	: 547.5		
STORAGE (MIL M3)	: GROSS : 0.2		ACTIVE	: 0.0		DEAD	: 0.1	SEDIMENT	: -
MAIN DAM/WEIR									
TYPE	: INTAKE GATED		CREST EL (M)	: 553.2		CREST LENGTH (M)	: 48.0		
DAM HEIGHT (M)	: 7.2		DAM VOL (1000M3)	: 4.7		GEOLOGICAL CLASS	: GOOD		
SPILLWAY									
TYPE	: NON		CREST EL. (M)	: -		OVERFLOW WIDTH(M)	: -		
DESIGN FLOOD(M3/S)	: -		GATES (TON)	: -		GATE DIMENSION(M)	: -		
WATERWAY									
HEADRACE TYPE	: NON-PRESSURE TUNNEL		NUMBER	: 1		LENGTH (M)	: 5470.0	DIA.(M)	: 3.0
H/R SURGETANK TYPE	: HEAD TANK		NUMBER	: 1		CONDUIT LENGTH(M)	: 150.0	DIA.(M)	: 1.7
PENSTOCK TYPE	: OPEN-AIR		NUMBER	: 1		LENGTH (M)	: 130.0	DIA.(M)	: 2.3
			STEEL LINER(TON)	: 33.					
TAILRACE TYPE	: BAY/CHANNEL		NUMBER	: 1		CONDUIT LENGTH(M)	: 40.0	WIDTH(M)	: 31.7
POWERHOUSE									
TYPE	: OPEN AIR		SPACIAL VOL.(M3)	: 10463.					
POWER EQUIPMENT									
TYPE	: FRANCIS		NO. OF UNITS	: 3		UNIT CAPACITY (MW)	: 4.3		
TRANSMISSION									
SUBSTATION	: SOLANO		NO. OF CIRCUITS	: 1		LENGTH (KM)	: 66.0	K V	: 69S
ACCESS ROAD									
LENGTH (KM)	: 10.0		FROM INQUEBERGA						
LAND/RESETTLEMENT									
LAND SUBMERGED(HA)	: 0.								

POWER

INSTALLED CAPACITY (MW)	: 11.5	MIN. GUARANT(MW)	: 1.0	FIRM POWER (MW)	: 1.1		
ANNUAL TOTAL ENERGY(GWH)	: 61.4	FIRM ENERGY(GWH)	: 10.0	SECOND.ENERGY(GWH)	: 51.4		
MAX. DISCHARGE(M3/S)	: 15.2	FIRM DISC.(M3/S)	: 1.5				
MAX. STATIC HEAD (M)	: 100.2	AVE. NET HEAD(M)	: 92.7	TAILWATER LEVEL(M)	: 448.0		

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 28.12	POWER DEVELOP.	: 23.06	TRANSMISSION	: 2.31		
TOTAL COST/KW (USD/KW)	: 2434.37	ACCESS ROAD	: 2.73	LAND/RESETTLEMENT	: 0.01		
TOTAL COST/KWH(USD/KWH)	: 0.61						

ECONOMIC PARAMETER

KWH COST (USD/KWH)	: 0.102						

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 2-008-29-59-0-2

SCHEME : UPPER CASECNAN
RIVER SYSTEM : CAGAYAN
STREAM : CASIGNAN

WATER RESOURCES REGION : II
PROVINCE : QUIRINO
CATCHMENT AREA (KM2) : 247.0

COORDINATES : N16-06-39 E121-15-39
STUDY LEVEL : NEWLY IDENTIFIED THROUGH LHPPS

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RUN-OF-RIVER							
PLANT FACTOR ASSUMED	: 0.50	DEVELPM'T RATIO	: 0.66					
NO. OF SUB FACILITIES	: SUBDAM : 0	INTAKE	: 0	SADDLE DAM	: 0			
RESERVOIR								
LEVELS (EL.M)	: FSL : 675.0	MOL	: 673.6	AVE. OPERATING LEVEL	: 674.3			
STORAGE (MIL M3)	: GROSS : 0.1	ACTIVE	: 0.0	DEAD	: 0.1	SEDIMENT	: -	
MAIN DAM/WEIR								
TYPE	: INTAKE GATED	CREST EL (M)	: 680.0	CREST LENGTH (M)	: 72.0			
DAM HEIGHT (M)	: 7.0	DAM VOL (1000M3)	: 5.7	GEOLOGICAL CLASS	: GOOD			
SPILLWAY								
TYPE	: NON	CREST EL. (M)	: -	OVERFLOW WIDTH(M)	: -			
DESIGN FLOOD(M3/S)	: -	GATES (TON)	: -	GATE DIMENSION(M)	: -			
WATERWAY								
HEADRACE TYPE	: NON-PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	: 6720.0	DIA.(M)	: 2.9	
H/R SURGETANK TYPE	: HEAD TANK	NUMBER	: 1	CONDUIT LENGTH(M)	: 130.0	DIA.(M)	: 1.6	
PENSTOCK TYPE	: OPEN-AIR	NUMBER	: 1	LENGTH (M)	: 150.0	DIA.(M)	: 2.1	
		STEEL LINER(TON)	: 36.					
TAILRACE TYPE	: BAY/CHANNEL	NUMBER	: 1	CONDUIT LENGTH(M)	: 40.0	WIDTH(M)	: 31.7	
POWERHOUSE								
TYPE	: OPEN AIR	SPACIAL VOL.(M3)	: 10466.					
POWER EQUIPMENT								
TYPE	: FRANCIS	NO. OF UNITS	: 3	UNIT CAPACITY (MW)	: 4.6			
TRANSMISSION								
SUBSTATION	: SOLANO	NO. OF CIRCUITS	: 1	LENGTH (KM)	: 57.6	K V	: 69S	
ACCESS ROAD								
LENGTH (KM)	: 17.0	FROM INQUEBERGA						
LAND/RESETTLEMENT								
LAND SUBMERGED(HA)	: 0.							

POWER

INSTALLED CAPACITY (MW)	: 12.4	MIN. GUARANT(MW)	: 1.1	FIRM POWER (MW) : 1.2
ANNUAL TOTAL ENERGY(GWH)	: 66.0	FIRM ENERGY(GWH)	: 10.9	SECOND.ENERGY(GWH) : 55.2
MAX. DISCHARGE(M3/S)	: 13.1	FIRM DISC.(M3/S)	: 1.3	
MAX. STATIC HEAD (M)	: 125.0	AVE. NET HEAD(M)	: 115.8	TAILWATER LEVEL(M) : 550.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 31.57	POWER DEVELOP.	: 24.85	TRANSMISSION	: 2.06
TOTAL COST/KW (USD/KW)	: 2541.74	ACCESS ROAD	: 4.65	LAND/RESETTLEMENT	: 0.01
TOTAL COST/KWH(USD/KWH)	: 0.64				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.107

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 3-077-00-04-1-1

SCHEME : TABU (+BINGA)
RIVER SYSTEM : AGNO
STREAM : AGNO

WATER RESOURCES REGION : III
PROVINCE : BENGUET
CATCHMENT AREA (KM2) : 1070.0

COORDINATES : N16-16-43 E120-44-33
STUDY LEVEL : UNSCALED
(PRE F/S,RECONNAISSANCE)

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR							
PLANT FACTOR ASSUMED	: 0.17		DEVELPM'T RATIO	: 0.03				
NO. OF SUB FACILITIES	: SUBDAM : 0		INTAKE	: 0	SADDLE DAM	: 0		
RESERVOIR								
LEVELS (EL.M)	: FSL : 404.0		MOL	: 390.1	AVE. OPERATING LEVEL	: 399.4		
STORAGE (MIL M3)	: GROSS : 169.6		ACTIVE	: 59.8	DEAD	: 109.8	SEDIMENT :	9.4
MAIN DAM/WEIR								
TYPE	: ROCKFILL		CREST EL (M)	: 414.3	CREST LENGTH (M)	: 340.0		
DAM HEIGHT (M)	: 149.3		DAM VOL (MIL M3)	: 7.1	GEOLOGICAL CLASS	: VERY GOOD		
SPILLWAY								
TYPE	: ON ABUT.,GATED		CREST EL. (M)	: 395.0	OVERFLOW WIDTH(M)	: 62.4		
DESIGN FLOOD(M3/S)	: 9302.0		GATES (TON)	: 282.0	GATE DIMENSION(M)	: 7.8 X 9.0 X 8		
WATERWAY								
HEADRACE TYPE	: PRESSURE TUNNEL		NUMBER	: 1	LENGTH (M)	: 550.0	DIA.(M) :	7.1
H/R SURGETANK TYPE	: SURGE TANK		NUMBER	: 1	HEIGHT (M)	: 30.0	DIA.(M) :	28.6
PENSTOCK TYPE	: OPEN-AIR		NUMBER	: 1	LENGTH (M)	: 245.0	DIA.(M) :	6.1
			STEEL LINER(TON)	: 519.				
TAILRACE TYPE	: BAY/CHANNEL		NUMBER	: 1	CONDUIT LENGTH(M)	: 35.0	WIDTH(M) :	30.4
POWERHOUSE								
TYPE	: OPEN AIR		SPACIAL VOL.(M3)	: 22973.				
POWER EQUIPMENT								
TYPE	: FRANCIS		NO. OF UNITS	: 2	UNIT CAPACITY (MW)	: 77.0		
TRANSMISSION								
SUBSTATION	: SAN MANUEL		NO. OF CIRCUITS	: 1	LENGTH (KM)	: 24.0	K V :	230D
ACCESS ROAD								
LENGTH (KM)	: 12.0		FROM NEAREST PROVINCIAL ROAD					
LAND/RESETTLEMENT								
LAND SUBMERGED(HA)	: 710.0							

POWER

INSTALLED CAPACITY (MW)	: 138.6	MIN. GUARANT(MW)	: 117.8	FIRM POWER (MW)	: 22.7
ANNUAL TOTAL ENERGY(GWH)	: 449.7	FIRM ENERGY(GWH)	: 202.4	SECOND.ENERGY(GWH)	: 247.3
MAX. DISCHARGE(M3/S)	: 158.4	FIRM DISC.(M3/S)	: 26.4		
MAX. STATIC HEAD (M)	: 114.0	AVE. NET HEAD(M)	: 106.9	TAILWATER LEVEL(M)	: 290.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 312.17	POWER DEVELOP.	: 304.16	TRANSMISSION	: 4.69
TOTAL COST/KW (USD/KW)	: 2252.30	ACCESS ROAD	: 3.28	LAND/RESETTLEMENT	: 0.04
TOTAL COST/KWH(USD/KWH)	: 0.83				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.149

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 3-077-00-06-0-2

SCHEME : AGNO-2
RIVER SYSTEM : AGNO
STREAM : AGNO

WATER RESOURCES REGION : III
PROVINCE : BENGUET
CATCHMENT AREA (KM2) : 255.7

COORDINATES : N16-37-25 E120-49-47
STUDY LEVEL : NEWLY IDENTIFIED THROUGH LHPPS

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RUN-OF-RIVER							
PLANT FACTOR ASSUMED	: 0.50	DEVELPM'T RATIO	: 0.70					
NO. OF SUB FACILITIES	: SUBDAM : 0	INTAKE	: 1	SADDLE DAM	: 0			
RESERVOIR								
LEVELS (EL.M)	: FSL : 1014.1	MOL	: 1013.1	AVE. OPERATING LEVEL	: 1013.6			
STORAGE (MIL M3)	: GROSS : 0.1	ACTIVE	: 0.0	DEAD	: 0.1	SEDIMENT	:	-
MAIN DAM/WEIR								
TYPE	: INTAKE GATED	CREST EL (M)	: 1019.1	CREST LENGTH (M)	: 48.0			
DAM HEIGHT (M)	: 7.1	DAM VOL (1000M3)	: 4.6	GEOLOGICAL CLASS	: GOOD			
SPILLWAY								
TYPE	: NON	CREST EL. (M)	: -	OVERFLOW WIDTH(M)	: -			
DESIGN FLOOD(M3/S)	: -	GATES (TON)	: -	GATE DIMENSION(M)	: -			
WATERWAY								
HEADRACE TYPE	: NON-PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	: 5980.0	DIA.(M)	:	2.4
H/R SURGETANK TYPE	: HEAD TANK	NUMBER	: 1	CONDUIT LENGTH(M)	: 250.0	DIA.(M)	:	1.3
PENSTOCK TYPE	: OPEN-AIR	NUMBER	: 1	LENGTH (M)	: 240.0	DIA.(M)	:	1.7
		STEEL LINER(TON)	: 48.					
TAILRACE TYPE	: BAY/CHANNEL	NUMBER	: 1	CONDUIT LENGTH(M)	: 40.0	WIDTH(M)	:	41.5
POWERHOUSE								
TYPE	: OPEN AIR	SPACIAL VOL.(M3)	: 10711.					
POWER EQUIPMENT								
TYPE	: PELTON	NO. OF UNITS	: 3	UNIT CAPACITY (MW)	: 4.0			
TRANSMISSION								
SUBSTATION	: LA TRINIDAD	NO. OF CIRCUITS	: 1	LENGTH (KM)	: 27.6	K V	:	69S
ACCESS ROAD								
LENGTH (KM)	: 4.3	FROM NEAREST NATIONAL ROAD						
LAND/RESETTLEMENT								
LAND SUBMERGED(HA)	: 0.							

POWER

INSTALLED CAPACITY (MW)	: 10.9	MIN. GUARANT(MW)	: 0.8	FIRM POWER (MW) : 0.9
ANNUAL TOTAL ENERGY(GWH)	: 61.3	FIRM ENERGY(GWH)	: 7.8	SECOND.ENERGY(GWH) : 53.5
MAX. DISCHARGE(M3/S)	: 8.6	FIRM DISC.(M3/S)	: 0.7	
MAX. STATIC HEAD (M)	: 164.1	AVE. NET HEAD(M)	: 154.3	TAILWATER LEVEL(M) : 850.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 24.45	POWER DEVELOP.	: 22.10	TRANSMISSION	: 1.17
TOTAL COST/KW (USD/KW)	: 2244.87	ACCESS ROAD	: 1.17	LAND/RESETTLEMENT	: 0.00
TOTAL COST/KWH(USD/KWH)	: 0.54				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.090

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 3-077-00-07-0-2

SCHEME : AGNO-3
RIVER SYSTEM : AGNO
STREAM : AGNO

WATER RESOURCES REGION : III
PROVINCE : BENGUET
CATCHMENT AREA (KM2) : 195.7

COORDINATES : N16-40-42 E120-49-20
STUDY LEVEL : NEWLY IDENTIFIED THROUGH LHPPS

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RUN-OF-RIVER								
PLANT FACTOR ASSUMED	: 0.50		DEVELPM'T RATIO	: 0.70					
NO. OF SUB FACILITIES	: SUBDAM : 0		INTAKE	: 3		SADDLE DAM	: 0		
RESERVOIR									
LEVELS (EL.M)	: FSL : 1215.2		MOL	: 1212.8		AVE. OPERATING LEVEL	: 1214.0		
STORAGE (MIL M3)	: GROSS : 0.0		ACTIVE	: 0.0		DEAD	: 0.0	SEDIMENT	: -
MAIN DAM/WEIR									
TYPE	: INTAKE GATED		CREST EL (M)	: 1220.2		CREST LENGTH (M)	: 60.0		
DAM HEIGHT (M)	: 8.2		DAM VOL (1000M3)	: 6.0		GEOLOGICAL CLASS	: GOOD		
SPILLWAY									
TYPE	: NON		CREST EL. (M)	: -		OVERFLOW WIDTH(M)	: -		
DESIGN FLOOD(M3/S)	: -		GATES (TON)	: -		GATE DIMENSION(M)	: -		
WATERWAY									
HEADRACE TYPE	: NON-PRESSURE TUNNEL		NUMBER	: 1		LENGTH (M)	: 5540.0	DIA.(M)	: 2.2
H/R SURGETANK TYPE	: HEAD TANK		NUMBER	: 1		CONDUIT LENGTH(M)	: 290.0	DIA.(M)	: 1.1
PENSTOCK TYPE	: OPEN-AIR		NUMBER	: 1		LENGTH (M)	: 510.0	DIA.(M)	: 1.4
			STEEL LINER(TON)	: 113.					
TAILRACE TYPE	: BAY/CHANNEL		NUMBER	: 1		CONDUIT LENGTH(M)	: 30.0	WIDTH(M)	: 40.1
POWERHOUSE									
TYPE	: OPEN AIR		SPACIAL VOL.(M3)	: 9919.					
POWER EQUIPMENT									
TYPE	: PELTON		NO. OF UNITS	: 3		UNIT CAPACITY (MW)	: 3.5		
TRANSMISSION									
SUBSTATION	: LA TRINIDAD		NO. OF CIRCUITS	: 1		LENGTH (KM)	: 32.0	K V	: 69S
ACCESS ROAD									
LENGTH (KM)	: 0.		FROM NATIONAL ROAD IS LOCATED BESIDE THE SITE						
LAND/RESETTLEMENT									
LAND SUBMERGED(HA)	: 0.								

POWER

INSTALLED CAPACITY (MW)	: 9.5	MIN. GUARANT(MW)	: 0.7	FIRM POWER (MW)	: 0.8
ANNUAL TOTAL ENERGY(GWH)	: 53.6	FIRM ENERGY(GWH)	: 6.7	SECOND.ENERGY(GWH)	: 46.9
MAX. DISCHARGE(M3/S)	: 6.2	FIRM DISC.(M3/S)	: 0.5		
MAX. STATIC HEAD (M)	: 200.2	AVE. NET HEAD(M)	: 187.0	TAILWATER LEVEL(M)	: 1015.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 21.86	POWER DEVELOP.	: 20.56	TRANSMISSION	: 1.30
TOTAL COST/KW (USD/KW)	: 2298.55	ACCESS ROAD	: 0.	LAND/RESETTLEMENT	: 0.
TOTAL COST/KWH(USD/KWH)	: 0.55				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.092

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 4-007-00-01-0-1

SCHEME : KANAN
RIVER SYSTEM : AGOS
STREAM : KANAN

WATER RESOURCES REGION : IV
PROVINCE : QUEZON
CATCHMENT AREA (KM2) : 364.3

COORDINATES : N14-44-30 E121-31-54
STUDY LEVEL : UNSCALED
(PRE F/S,RECONNAISSANCE)

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR							
PLANT FACTOR ASSUMED	: 0.33	DEVELPM'T RATIO	: 0.75					
NO. OF SUB FACILITIES	: SUBDAM : 0	INTAKE	: 0	SADDLE DAM	: 0			
RESERVOIR								
LEVELS (EL.M)	: FSL : 294.0	MOL	: 231.0	AVE. OPERATING LEVEL	: 273.0			
STORAGE (MIL M3)	: GROSS : 1857.2	ACTIVE	: 1384.6	DEAD	: 472.6	SEDIMENT	:	25.6
MAIN DAM/WEIR								
TYPE	: ROCKFILL	CREST EL (M)	: 297.8	CREST LENGTH (M)	: 1070.0			
DAM HEIGHT (M)	: 204.8	DAM VOL (MIL M3)	: 35.9	GEOLOGICAL CLASS	: GOOD			
SPILLWAY								
TYPE	: ON ABUT..GATED	CREST EL. (M)	: 276.0	OVERFLOW WIDTH(M)	: 26.0			
DESIGN FLOOD(M3/S)	: 4742.0	GATES (TON)	: 548.1	GATE DIMENSION(M)	: 13.0 X 18.0 X 2			
WATERWAY								
HEADRACE TYPE	: PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	: 872.0	DIA.(M)	:	7.1
H/R SURGETANK TYPE	: SURGE TANK	NUMBER	: 1	HEIGHT (M)	: 81.9	DIA.(M)	:	28.3
PENSTOCK TYPE	: INCLINED	NUMBER	: 1	LENGTH (M)	: 334.0	DIA.(M)	:	5.6
		STEEL LINER(TON)	: 950.					
TAILRACE TYPE	: BAY/CHANNEL	NUMBER	: 1	CONDUIT LENGTH(M)	: 100.0	WIDTH(M)	:	46.1
POWERHOUSE								
TYPE	: OPEN AIR	SPACIAL VOL.(M3)	: 29455.					
POWER EQUIPMENT								
TYPE	: FRANCIS	NO. OF UNITS	: 3	UNIT CAPACITY (MW)	: 78.8			
TRANSMISSION								
SUBSTATION	: INFANTA	NO. OF CIRCUITS	: 1	LENGTH (KM)	: 18.6	K V	:	230D
ACCESS ROAD								
LENGTH (KM)	: 14.0	FROM NEAREST PROVINCIAL ROAD						
LAND/RESETTLEMENT								
LAND SUBMERGED(HA)	: 3870.0							

POWER

INSTALLED CAPACITY (MW)	: 212.7	MIN. GUARANT(MW)	: 153.1	FIRM POWER (MW) : 71.3
ANNUAL TOTAL ENERGY(GWH)	: 686.7	FIRM ENERGY(GWH)	: 621.0	SECOND.ENERGY(GWH) : 65.7
MAX. DISCHARGE(M3/S)	: 153.8	FIRM DISC.(M3/S)	: 51.3	
MAX. STATIC HEAD (M)	: 194.0	AVE. NET HEAD(M)	: 168.8	TAILWATER LEVEL(M) : 100.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 729.60	POWER DEVELOP.	: 721.28	TRANSMISSION	: 3.91
TOTAL COST/KW (USD/KW)	: 3430.20	ACCESS ROAD	: 3.83	LAND/RESETTLEMENT	: 0.59
TOTAL COST/KWH(USD/KWH)	: 1.09				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.196

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 4-007-00-01-1-1

SCHEME : KANAN (+UPPER AGOS 2)
RIVER SYSTEM : AGOS
STREAM : KANAN

WATER RESOURCES REGION : IV
PROVINCE : QUEZON
CATCHMENT AREA (KM2) : 364.3

COORDINATES : N14-44-30 E121-31-54
STUDY LEVEL : UNSCALED
(PRE F/S.RECONNAISSANCE)

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR						
PLANT FACTOR ASSUMED	: 0.25	DEVELPM'T RATIO	: 0.01				
NO. OF SUB FACILITIES	: SUBDAM : 0	INTAKE	: 0	SADDLE DAM	: 0		
RESERVOIR							
LEVELS (EL.M)	: FSL : 156.0	MOL	: 149.3	AVE. OPERATING LEVEL	: 153.8		
STORAGE (MIL M3)	: GROSS : 39.7	ACTIVE	: 10.9	DEAD	: 28.8	SEDIMENT :	5.5
MAIN DAM/WEIR							
TYPE	: ROCKFILL	CREST EL (M)	: 165.5	CREST LENGTH (M)	: 330.0		
DAM HEIGHT (M)	: 60.5	DAM VOL (MIL M3)	: 1.5	GEOLOGICAL CLASS	: GOOD		
SPILLWAY							
TYPE	: ON ABUT..GATED	CREST EL. (M)	: 147.0	OVERFLOW WIDTH(M)	: 60.0		
DESIGN FLOOD(M3/S)	: 8383.0	GATES (TON)	: 271.2	GATE DIMENSION(M)	: 10.0 X 9.0 X 6		
WATERWAY							
HEADRACE TYPE	: NON	NUMBER	: -	LENGTH (M)	: -	DIA.(M) :	-
H/R SURGETANK TYPE	: NON	NUMBER	: -	HEIGHT (M)	: -	DIA.(M) :	-
PENSTOCK TYPE	: INCLINED	NUMBER	: 1	LENGTH (M)	: 300.0	DIA.(M) :	7.1
		STEEL LINER(TON)	: 618.				
TAILRACE TYPE	: BAY/CHANNEL	NUMBER	: 1	CONDUIT LENGTH(M)	: 90.0	WIDTH(M) :	31.2
POWERHOUSE							
TYPE	: OPEN AIR	SPACIAL VOL.(M3)	: 21437.				
POWER EQUIPMENT							
TYPE	: FRANCIS	NO. OF UNITS	: 2	UNIT CAPACITY (MW)	: 43.8		
TRANSMISSION							
SUBSTATION	: INFANTA	NO. OF CIRCUITS	: 1	LENGTH (KM)	: 18.6	K V :	230D
ACCESS ROAD							
LENGTH (KM)	: 14.0	FROM NEAREST PROVINCIAL ROAD					
LAND/RESETTLEMENT							
LAND SUBMERGED(HA)	: 230.0						

POWER

INSTALLED CAPACITY (MW)	: 78.8	MIN. GUARANT(MW)	: 67.1	FIRM POWER (MW) : 19.3
ANNUAL TOTAL ENERGY(GWH)	: 211.3	FIRM ENERGY(GWH)	: 172.6	SECOND.ENERGY(GWH) : 38.7
MAX. DISCHARGE(M3/S)	: 181.9	FIRM DISC.(M3/S)	: 45.5	
MAX. STATIC HEAD (M)	: 56.0	AVE. NET HEAD(M)	: 52.8	TAILWATER LEVEL(M) : 100.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 160.57	POWER DEVELOP.	: 152.78	TRANSMISSION	: 3.91
TOTAL COST/KW (USD/KW)	: 2037.66	ACCESS ROAD	: 3.83	LAND/RESETTLEMENT	: 0.04
TOTAL COST/KWH(USD/KWH)	: 0.80				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.144

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 4-007-00-05-0-1

SCHEME : UPPER AGOS-2
RIVER SYSTEM : AGOS
STREAM : KANAN

WATER RESOURCES REGION : IV
PROVINCE : QUEZON
CATCHMENT AREA (KM2) : 266.4

COORDINATES : N14-48-40 E121-30-42
STUDY LEVEL : NEWLY IDENTIFIED THROUGH LHPPS

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR						
PLANT FACTOR ASSUMED	: 0.33	DEVELPM'T RATIO	: 0.75				
NO. OF SUB FACILITIES	: SUBDAM : 0	INTAKE	: 0	SADDLE DAM	: 0		
RESERVOIR							
LEVELS (EL.M)	: FSL : 316.0	MOL	: 267.3	AVE. OPERATING LEVEL	: 299.8		
STORAGE (MIL M3)	: GROSS : 1526.3	ACTIVE	: 1137.6	DEAD	: 388.7	SEDIMENT :	19.9
MAIN DAM/WEIR							
TYPE	: CONCRETE	CREST EL (M)	: 317.7	CREST LENGTH (M)	: 440.0		
DAM HEIGHT (M)	: 157.7	DAM VOL (1000M3)	: 1977.6	GEOLOGICAL CLASS	: VERY GOOD		
SPILLWAY							
TYPE	: IN DAM.GATED	CREST EL. (M)	: -	OVERFLOW WIDTH(M)	: 60.0		
DESIGN FLOOD(M3/S)	: 5733.0	GATES (TON)	: 472.8	GATE DIMENSION(M)	: 10.0 X 12.0 X 6		
WATERWAY							
HEADRACE TYPE	: NON	NUMBER	: -	LENGTH (M)	: -	DIA.(M) :	-
H/R SURGETANK TYPE	: NON	NUMBER	: -	HEIGHT (M)	: -	DIA.(M) :	-
PENSTOCK TYPE	: IN DAM	NUMBER	: 2	LENGTH (M)	: 184.0	DIA.(M) :	3.9
		STEEL LINER(TON)	: 391.				
TAILRACE TYPE	: BAY/CHANNEL	NUMBER	: 1	CONDUIT LENGTH(M)	: 100.0	WIDTH(M) :	28.8
POWERHOUSE							
TYPE	: OPEN AIR	SPACIAL VOL.(M3)	: 22141.				
POWER EQUIPMENT							
TYPE	: FRANCIS	NO. OF UNITS	: 2	UNIT CAPACITY (MW)	: 75.2		
TRANSMISSION							
SUBSTATION	: INFANTA	NO. OF CIRCUITS	: 1	LENGTH (KM)	: 21.0	K V :	230D
ACCESS ROAD							
LENGTH (KM)	: 18.6	FROM NEAREST PROVINCIAL ROAD					
LAND/RESETTLEMENT							
LAND SUBMERGED(HA)	: 3800.0						

POWER

INSTALLED CAPACITY (MW)	: 135.4	MIN. GUARANT(MW)	: 96.9	FIRM POWER (MW) : 45.1
ANNUAL TOTAL ENERGY(GWH)	: 440.1	FIRM ENERGY(GWH)	: 395.3	SECOND.ENERGY(GWH) : 44.8
MAX. DISCHARGE(M3/S)	: 125.5	FIRM DISC.(M3/S)	: 41.8	
MAX. STATIC HEAD (M)	: 150.0	AVE. NET HEAD(M)	: 131.7	TAILWATER LEVEL(M) : 166.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 285.17	POWER DEVELOP.	: 275.24	TRANSMISSION	: 4.26
TOTAL COST/KW (USD/KW)	: 2106.10	ACCESS ROAD	: 5.08	LAND/RESETTLEMENT	: 0.58
TOTAL COST/KWH(USD/KWH)	: 0.67				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.120

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 4-115-01-01-0-1

SCHEME : WAWA
RIVER SYSTEM : PASIG
STREAM : WAWA

WATER RESOURCES REGION : IV
PROVINCE : RIZAL
CATCHMENT AREA (KM2) : 283.2

COORDINATES : N14-43-30 E121-11-24
STUDY LEVEL : UNSCALED
(PRE F/S,RECONNAISSANCE)

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR							
PLANT FACTOR ASSUMED	: 0.33		DEVELPM'T RATIO	: 0.67				
NO. OF SUB FACILITIES	: SUBDAM : 0		INTAKE	: 0	SADDLE DAM	; 0		
RESERVOIR								
LEVELS (EL.M)	: FSL : 151.0		MOL	: 108.8	AVE. OPERATING LEVEL	; 136.9		
STORAGE (MIL M3)	: GROSS : 835.0		ACTIVE	: 558.4	DEAD	; 276.6	SEDIMENT :	19.8
MAIN DAM/WEIR								
TYPE	: CONCRETE		CREST EL (M)	: 153.2	CREST LENGTH (M)	: 240.0		
DAM HEIGHT (M)	: 144.2		DAM VOL (1000M3)	: 1138.8	GEOLOGICAL CLASS	: ACCEPTABLE		
SPILLWAY								
TYPE	: IN DAM,GATED		CREST EL. (M)	: -	OVERFLOW WIDTH(M)	: 30.0		
DESIGN FLOOD(M3/S)	: 3041.0		GATES (TON)	: 236.4	GATE DIMENSION(M)	: 10.0 X 12.0 X 3		
WATERWAY								
HEADRACE TYPE	: NON		NUMBER	: -	LENGTH (M)	: -	DIA.(M) :	-
H/R SURGETANK TYPE	: NON		NUMBER	: -	HEIGHT (M)	: -	DIA.(M) :	-
PENSTOCK TYPE	: IN DAM		NUMBER	: 2	LENGTH (M)	: 144.0	DIA.(M) :	3.1
			STEEL LINER(TON)	: 163.				
TAILRACE TYPE	: BAY/CHANNEL		NUMBER	: 1	CONDUIT LENGTH(M)	: 115.0	WIDTH(M) :	24.4
POWERHOUSE								
TYPE	: OPEN AIR		SPACIAL VOL.(M3)	: 16583.				
POWER EQUIPMENT								
TYPE	: FRANCIS		NO. OF UNITS	: 2	UNIT CAPACITY (MW)	: 33.9		
TRANSMISSION								
SUBSTATION	: DOLORES		NO. OF CIRCUITS	: 2	LENGTH (KM)	: 21.0	K V :	115S
ACCESS ROAD								
LENGTH (KM)	: 3.6		FROM MONTALBAN					
LAND/RESETTLEMENT								
LAND SUBMERGED(HA)	: 2300.0							

POWER

INSTALLED CAPACITY (MW)	: 61.0	MIN. GUARANT(MW)	: 43.2	FIRM POWER (MW)	: 20.3
ANNUAL TOTAL ENERGY(GWH)	: 202.1	FIRM ENERGY(GWH)	: 178.1	SECOND.ENERGY(GWH)	: 24.0
MAX. DISCHARGE(M3/S)	: 67.1	FIRM DISC.(M3/S)	: 22.4		
MAX. STATIC HEAD (M)	: 126.7	AVE. NET HEAD(M)	: 110.9	TAILWATER LEVEL(M)	: 24.3

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 175.20	POWER DEVELOP.	: 169.95	TRANSMISSION	: 2.65
TOTAL COST/KW (USD/KW)	: 2872.05	ACCESS ROAD	: 0.98	LAND/RESETTLEMENT	: 1.61
TOTAL COST/KWH(USD/KWH)	: 0.90				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.161

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 5-014-01-01-0-1

SCHEME : BOSIGON
RIVER SYSTEM : MATOGDON
STREAM : BOSIGON

WATER RESOURCES REGION : V
PROVINCE : CAMARINES NORTE
CATCHMENT AREA (KM2) : 335.7

COORDINATES : N14-10-07 E122-38-54
STUDY LEVEL : NEWLY IDENTIFIED THROUGH LHPPS

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR							
PLANT FACTOR ASSUMED	: 0.17	DEVELPM'T RATIO	: 0.38					
NO. OF SUB FACILITIES	: SUBDAM : 0	INTAKE	: 0	SADDLE DAM	: 0			
RESERVOIR								
LEVELS (EL.M)	: FSL : 80.0	MOL	: 56.8	AVE. OPERATING LEVEL	: 72.3			
STORAGE (MIL M3)	: GROSS : 546.4	ACTIVE	: 435.8	DEAD	: 110.6	SEDIMENT	:	23.7
MAIN DAM/WEIR								
TYPE	: ROCKFILL	CREST EL (M)	: 84.4	CREST LENGTH (M)	: 440.0			
DAM HEIGHT (M)	: 62.4	DAM VOL (MIL M3)	: 2.1	GEOLOGICAL CLASS	: ACCEPTABLE			
SPILLWAY								
TYPE	: ON ABUT.,GATED	CREST EL. (M)	: 71.0	OVERFLOW WIDTH(M)	: 40.0			
DESIGN FLOOD(M3/S)	: 3273.0	GATES (TON)	: 180.8	GATE DIMENSION(M)	: 8.0 X 9.0 X 5			
WATERWAY								
HEADRACE TYPE	: PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	: 585.0	DIA.(M)	:	6.3
H/R SURGETANK TYPE	: SURGE TANK	NUMBER	: 1	HEIGHT (M)	: 38.2	DIA.(M)	:	25.3
PENSTOCK TYPE	: OPEN-AIR	NUMBER	: 1	LENGTH (M)	: 60.0	DIA.(M)	:	5.8
		STEEL LINER(TON)	: 73.					
TAILRACE TYPE	: BAY/CHANNEL	NUMBER	: 1	CONDUIT LENGTH(M)	: 55.0	WIDTH(M)	:	27.2
POWERHOUSE								
TYPE	: OPEN AIR	SPACIAL VOL.(M3)	: 16866.					
POWER EQUIPMENT								
TYPE	: KAPLAN	NO. OF UNITS	: 2	UNIT CAPACITY (MW)	: 24.9			
TRANSMISSION								
SUBSTATION	: LABO	NO. OF CIRCUITS	: 2	LENGTH (KM)	: 30.0	K V	:	115S
ACCESS ROAD								
LENGTH (KM)	: 0.	FROM NATIONAL ROAD BESIDE DAMSITE						
LAND/RESETTLEMENT								
LAND SUBMERGED(HA)	: 3200.0							

POWER

INSTALLED CAPACITY (MW)	: 44.8	MIN. GUARANT(MW)	: 28.8	FIRM POWER (MW)	: 7.4
ANNUAL TOTAL ENERGY(GWH)	: 123.2	FIRM ENERGY(GWH)	: 65.4	SECOND.ENERGY(GWH)	: 57.8
MAX. DISCHARGE(M3/S)	: 114.1	FIRM DISC.(M3/S)	: 19.0		
MAX. STATIC HEAD (M)	: 57.0	AVE. NET HEAD(M)	: 47.9	TAILWATER LEVEL(M)	: 23.0

CONSTRUCTION COST (MIL USD)

TOTAL COST	: 132.16	POWER DEVELOP.	: 127.12	TRANSMISSION	: 3.45
TOTAL COST/KW (USD/KW)	: 2950.03	ACCESS ROAD	: 0.	LAND/RESETTLEMENT	: 1.60
TOTAL COST/KWH(USD/KWH)	: 1.25				

ECONOMIC PARAMETER

KWH COST (USD/KWH) : 0.224

C-12　フィージビリティ調査終了プロジェクトのカタログ

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO.1-022-02-81-0-1

SCHEME	: BINONGAN	WATER RESOURCES REGION	: I		
RIVER SYSTEM	: ABRA	PROVINCE	: ABRA	COORDINATES	: N17-45-00 E120-52-00
STREAM	: BINONGAN/TINEG	CATCHMENT AREA (KM2)	: 683.0	STUDY LEVEL	: FEASIBILITY STUDY

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR						
PLANT FACTOR ASSUMED	: 0.47	DEVELPM'T RATIO	: -				
NO.OF SUB FACILITIES	: SUBDAM ;0	INTAKE	; 0	SADDLE DAM	; 0		
RESERVOIR							
LEVELS (EL,M)	: FSL ; 380.0	MOL	; 350.0	AVE.OPERATING LEVEL	; -		
STORAGE (MIL M3)	: GROSS ; 121.0	ACTIVE	; 79.0	DEAD	; 42.0	SEDIMENT	:
MAIN DAM/WEIR							
TYPE	: ROCKFILL	CREST EL (M)	: 387.0	CREST LENGTH (M)	: 375.0		
DAM HEIGHT (M)	: 112.0	DAM VOL (MIL M3)	: 3.4	GEOLOGICAL CLASS	: -		
SPILLWAY							
TYPE	: GATED CHUTE	CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -		
DESIGN FLOOD (M3/S)	: 4400.0	GATES (TON)	: -	GATE DIMENSION (M)	: 10.0×12.0×4		
WATERWAY							
HEADRACE TYPE	: PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	: 11950.0	DIA.(M)	: 5.8
H/R SURGETANK TYPE	: SURGE TANK	NUMBER	: 1	HEIGHT (M)	: 107.0	DIA.(M)	: 15.5
PENSTOCK TYPE	: -	NUMBER	: 1	LENGTH (M)	: 310.0	DIA.(M)	: 5.0/4.0
		STEEL LINER (TON)	: -				
TAILRACE TYPE	: -	NUMBER	: -	CONDUIT LENGTH (M)	: -	WIDTH (M)	: -
POWERHOUSE							
TYPE	: OPEN-AIR	SPACIAL VOL.(M3)	: 12686.				
POWER EQUIPMENT							
TYPE	: FRANCIS	NO.OF UNITS	: 3	UNIT CAPACITY (MW)	: 70.0		
TRANSMISSION							
SUBSTATION	: SAN ESTEBAN	NO.OF CIRCUITS	: -	LENGTH (KM)	: 18.0	K V	: 230D
ACCESS ROAD		FROM					
LENGTH (KM)	: -						
LAND/RESETTLEMENT							
LAND SUBMERGED (HA)	: -						

POWER

INSTALLED CAPACITY (MW)	: 175.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 82.3
ANNUAL TOTAL ENERGY (GWH)	: 718.0	FIRM ENERGY (GWH)	: 426.0	SECOND.ENERGY (GWH)	: 292.0
MAX. DISCHARGE (M3/S)	: 90.0	FIRM DISC.(M3/S)	: 42.3		
MAX. STATIC HEAD (M)	: 240.0	AVE.NET HEAD (M)	: 218.0	TAILWATER LEVEL (M)	: 140.0

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 269.2	POWER DEVELOP.	: -	TRANSMISSION	: -
TOTAL COST/KW (US$/KW)	: 1538.3	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -
TOTAL COST/KWH (US$/KWH)	: 0.427				

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.076

SCHEME	: PALSIGUAN/NUEVA ERA	WATER RESOURCES REGION	: I		
RIVER SYSTEM	: ABRA	PROVINCE	: ILOCOS NORTE	COORDINATES	: N17-49-45 E120-43-47
STREAM	: PALSIGUAN	CATCHMENT AREA (KM2)	: 205.4	STUDY LEVEL	: FEASIBILITY STUDY

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR						
PLANT FACTOR ASSUMED	: 0.54	DEVELPM'T RATIO	:				
NO.OF SUB FACILITIES	: SUBDAM ; 0	INTAKE	; 0	SADDLE DAM	; 0		
RESERVOIR (PALSIGUAN/NUEVA ERA)							
LEVELS (EL,M)	: FSL ;334.5/150.0	MOL	; 275.0/148.5	AVE.OPERATING LEVEL	;		
STORAGE (MIL M3)	: GROSS ;232.0/5.0	ACTIVE	; 189.0/0.5	DEAD	; 43.0/4.5	SEDIMENT	:
MAIN DAM/WEIR (PALSIGUAN/NUEVA ERA)							
TYPE	: FILL/GRAVITY	CREST EL (M)	: 334.5/152.0	CREST LENGTH (M)	: 480.0/220.0		
DAM HEIGHT (M)	: 139.5/45.5	DAM VOL (MIL M3)	: 9.1/0.1	GEOLOGICAL CLASS	:		
SPILLWAY (PALSIGUAN/NUEVA ERA)							
TYPE	: GATED/OVERFLOW	CREST EL.(M)	: -	OVERFLOW WIDTH (M)	:		
DESIGN FLOOD (M3/S)	: 3070.0/ -	GATES (TON)	: -	GATE DIMENSION (M)	: 11.5X12.5X3		
WATERWAY (PALSIGUAN)							
HEADRACE TYPE	: PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	: 6150.0	DIA.(M)	: 3.6
H/R SURGETANK TYPE	: SURGE TANK	NUMBER	: 1	HEIGHT (M)	: 90.0	DIA.(M)	: 12.0
PENSTOCK TYPE	: -	NUMBER	: 1	LENGTH (M)	: 208.0	DIA.(M)	: 3.0
		STEEL LINER (TON)	: -				
TAILRACE TYPE	: -	NUMBER	: -	CONDUIT LENGTH (M)	: -	WIDTH (M)	: -
POWERHOUSE (PALSIGUAN/NUEVA ERA)							
TYPE	: UNDERGROUND/OPEN	SPACIAL VOL.(M3)	: -				
POWER EQUIPMENT (PALSIGUAN/NUEVA ERA)							
TYPE	: DERIAZ/KAPLAN	NO.OF UNITS	: 1/1	UNIT CAPACITY (MW)	: 36.6/7.5		
TRANSMISSION							
SUBSTATION	: -	NO.OF CIRCUITS	: 1	LENGTH (KM)	: 3.6	K V	: 230D
ACCESS ROAD							
LENGTH (KM)	: -	FROM					
LAND/RESETTLEMENT							
LAND SUBMERGED (HA)	: -						

POWER(PALSIGUAN/NUEVA ERA)

INSTALLED CAPACITY (MW)	: 35.0/7.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 22.7
ANNUAL TOTAL ENERGY (GWH)	: 160.0/40.0	FIRM ENERGY (GWH)	: 143.0	SECOND.ENERGY (GWH)	: 57.0
MAX. DISCHARGE (M3/S)	: 28.2/29.3	FIRM DISC.(M3/S)	: -		
MAX. STATIC HEAD (M)	: 184.5/29.5	AVE.NET HEAD (M)	:170.7/29.5	TAILWATER LEVEL (M)	:150/120.5

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 173.1	POWER DEVELOP.	: -	TRANSMISSION	: -
TOTAL COST/KW (US$/KW)	: 4121.4	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -
TOTAL COST/KWH (US$/KWH)	: 0.946				

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.169	

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO.2-006-00-81-0-1

SCHEME	: GENED	WATER RESOURCES REGION	: II		
RIVER SYSTEM	: ABULOG	PROVINCE	: KALINGA-APAYAO	COORDINATES	: N18-05-18 E121-15-36
STREAM	: ABULOG	CATCHMENT AREA (KM2)	: 1583.1	STUDY LEVEL	: FEASIBILITY STUDY

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR							
PLANT FACTOR ASSUMED	: 0.31	DEVELPM'T RATIO	: -					
NO.OF SUB FACILITIES	: SUBDAM ; 0	INTAKE	; 0	SADDLE DAM	; 0			
RESERVOIR								
LEVELS (EL,M)	: FSL ; 180.0	MOL	; 170.0	AVE.OPERATING LEVEL	; -			
STORAGE (MIL M3)	: GROSS ; 2800.0	ACTIVE	; 1200.0	DEAD	; 1600.0	SEDIMENT	: 0.4	
MAIN DAM/WEIR								
TYPE	: CONCRETE ARCH	CREST EL (M)	: 185.0	CREST LENGTH (M)	: 471.8			
DAM HEIGHT (M)	: 175.0	DAM VOL (MIL M3)	: 2.0	GEOLOGICAL CLASS	: -			
SPILLWAY								
TYPE	: GATED	CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -			
DESIGN FLOOD (M3/S)	: 15000.0	GATES (TON)	: -	GATE DIMENSION (M)	: 12.0×13.0×8			
WATERWAY								
HEADRACE TYPE	: PRESSURE TUNNEL	NUMBER	: 2	LENGTH (M)	: 1336.8	DIA.(M)	: 8.1	
H/R SURGETANK TYPE	: SURGE TANK	NUMBER	: 2	HEIGHT (M)	: 63.5	DIA.(M)	: 20.2	
PENSTOCK TYPE	: -	NUMBER	: 2	LENGTH (M)	: 227.1	DIA.(M)	: 7.6/5.2	
		STEEL LINER (TON)	: -					
TAILRACE TYPE	: OPEN CHANNEL	NUMBER	: 1	CONDUIT LENGTH (M)	: 60.0	WIDTH (M)	: -	
POWERHOUSE								
TYPE	: OPEN-AIR	SPACIAL VOL.(M3)	: 58182.					
POWER EQUIPMENT								
TYPE	: FRANCIS	NO.OF UNITS	: 4	UNIT CAPACITY (MW)	: 166.7			
TRANSMISSION								
SUBSTATION	: -	NO.OF CIRCUITS	: -	LENGTH (KM)	: -	X V	: 500D	
ACCESS ROAD								
LENGTH (KM)	: -	FROM						
LAND/RESETTLEMENT								
LAND SUBMERGED (HA)	: -							

POWER

INSTALLED CAPACITY (MW)	: 600.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 186.0
ANNUAL TOTAL ENERGY (GWH)	: 1632.0	FIRM ENERGY (GWH)	: 490.0	SECOND.ENERGY (GWH)	: 1142.0
MAX. DISCHARGE (M3/S)	: 241.4	FIRM DISC.(M3/S)	: 74.8		
MAX. STATIC HEAD (M)	: 129.3	AVE.NET HEAD (M)	: 114.1	TAILWATER LEVEL (M)	: 50.7

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 801.5	POWER DEVELOP.	: -	TRANSMISSION	: -
TOTAL COST/KW (US$/KW)	: 1335.8	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -
TOTAL COST/KWH (US$/KWH)	: 0.622				

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.111				

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 2-008-03-81-0-1

SCHEME	: CHICO IV		WATER RESOURCES REGION	: II			
RIVER SYSTEM	: CAGAYAN		PROVINCE	: KALINGA APAYAO	COORDINATES	: N17-23-18	E121-13-37
STREAM	: CHICO		CATCHMENT AREA (KM2)	: 1410.0	STUDY LEVEL	: DETAIL DESIGN	

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR								
PLANT FACTOR ASSUMED	: 0.30		DEVELPM'T RATIO	: -					
NO.OF SUB FACILITIES	: SUBDAM ; 0		INTAKE	; 0	SADDLE DAM	; 0			
RESERVOIR									
LEVELS (EL,M)	: FSL ; 451.0		MOL	; 411.0	AVE.OPERATING LEVEL	; -			
STORAGE (MIL M3)	: GROSS ; 740.0		ACTIVE	; 430.0	DEAD	; 310.0	SEDIMENT	: 2.9	
MAIN DAM/WEIR									
TYPE	: EARTH/ROCKFILL		CREST EL (M)	: 455.0	CREST LENGTH (M)	: 890.0			
DAM HEIGHT (M)	: 105.0		DAM VOL (MIL M3)	: 17.8	GEOLOGICAL CLASS	: -			
SPILLWAY									
TYPE	: CHUTE GATED		CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -			
DESIGN FLOOD (M3/S)	: 7500.0		GATES (TON)	: -	GATE DIMENSION (M)	:10.5×15.0×6			
WATERWAY									
HEADRACE TYPE	: PRESSURE TUNNEL		NUMBER	: 2	LENGTH (M)	: 535.0	DIA.(M)	: 6.5	
H/R SURGETANK TYPE	: -		NUMBER	: -	HEIGHT (M)	: -	DIA.(M)	: -	
PENSTOCK TYPE	: -		NUMBER	: 4	LENGTH (M)	: 54.0	DIA.(M)	:6.5/4.6	
			STEEL LINER (TON)	: -					
TAILRACE TYPE	: -		NUMBER	: -	CONDUIT LENGTH (M)	: -	WIDTH (M):	-	
POWERHOUSE									
TYPE	: OPEN-AIR		SPACIAL VOL.(M3)	: 66726.					
POWER EQUIPMENT									
TYPE	: FRANCIS		NO.OF UNITS	: 4	UNIT CAPACITY (MW)	: 120.0			
TRANSMISSION									
SUBSTATION	: -		NO.OF CIRCUITS	: 1	LENGTH (KM)	: 3.6	K V	: 230D	
ACCESS ROAD									
LENGTH (KM)	: -		FROM						
LAND/RESETTLEMENT									
LAND SUBMERGED (HA)	: -								

POWER

INSTALLED CAPACITY (MW)	: 360.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: -		
ANNUAL TOTAL ENERGY (GWH)	: 955.0	FIRM ENERGY (GWH)	: 216.0	SECOND.ENERGY (GWH)	: 739.0		
MAX. DISCHARGE (M3/S)	: 355.0	FIRM DISC.(M3/S)	: -				
MAX. STATIC HEAD (M)	: 151.0	AVE.NET HEAD (M)	: 132.5	TAILWATER LEVEL (M)	: 300.0		

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 534.9	POWER DEVELOP.	: -	TRANSMISSION	: -		
TOTAL COST/KW (US$/KW)	: 1485.8	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -		
TOTAL COST/KWH (US$/KWH)	: 0.729						

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.131						

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 2-008-26-82-0-1

SCHEME	: DIDUYON		WATER RESOURCES REGION	: II			
RIVER SYSTEM	: CAGAYAN		PROVINCE	: NUEVA VIZCAYA	COORDINATES	: N16-15-57	E121-26-47
STREAM	: ADDALAM		CATCHMENT AREA (KM2)	: 477.0	STUDY LEVEL	: FEASIBILITY STUDY	

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR						
PLANT FACTOR ASSUMED	: 0.32		DEVELPM'T RATIO	: -			
NO.OF SUB FACILITIES	: SUBDAM ; 0		INTAKE	; 0	SADDLE DAM	; 0	
RESERVOIR							
LEVELS (EL,M)	: FSL ;648.0		MOL	; 620.0	AVE.OPERATING LEVEL	; -	
STORAGE (MIL M3)	: GROSS ;579.0		ACTIVE	; 454.0	DEAD	; 125.0	SEDIMENT : -
MAIN DAM/WEIR							
TYPE	: CONCRETE GRAVITY		CREST EL (M)	: 653.0	CREST LENGTH (M)	: 375.0	
DAM HEIGHT (M)	: 111.0		DAM VOL (MIL M3)	: 1.2	GEOLOGICAL CLASS	: -	
SPILLWAY							
TYPE	: OPEN CHUTE&TUNNEL		CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -	
DESIGN FLOOD (M3/S)	: 8900.0		GATES (TON)	: -	GATE DIMENSION (M)	:- X - X	
WATERWAY							
HEADRACE TYPE	: PRESSURE TUNNEL		NUMBER	: 1	LENGTH (M)	:11700.0	DIA.(M) : 5.9
H/R SURGETANK TYPE	: SURGE TANK		NUMBER	: 1	HEIGHT (M)	: 77.0	DIA.(M) : 8.0
PENSTOCK TYPE	: OPEN-AIR		NUMBER	: 1	LENGTH (M)	: 2013.0	DIA.(M) : 5.0/2.7
			STEEL LINER (TON)	: -			
TAILRACE TYPE	: NONPRESSURE TUNNEL		NUMBER	: 1	CONDUIT LENGTH (M)	: 203.0	WIDTH (M) : 5.9
POWERHOUSE							
TYPE	: OPEN-AIR		SPACIAL VOL.(M3)	: 34835.			
POWER EQUIPMENT							
TYPE	: FRANCIS		NO.OF UNITS	: 2	UNIT CAPACITY (MW)	: 191.7	
TRANSMISSION							
SUBSTATION	: -		NO.OF CIRCUITS	: -	LENGTH (KM)	: -	K V : 230
ACCESS ROAD							
LENGTH (KM)	: -		FROM				
LAND/RESETTLEMENT							
LAND SUBMERGED (HA)	: -						

POWER

INSTALLED CAPACITY (MW)	: 352.0		MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 112.6	
ANNUAL TOTAL ENERGY (GWH)	: 957.0		FIRM ENERGY (GWH)	: 709.0	SECOND.ENERGY (GWH)	: 248.0	
MAX. DISCHARGE (M3/S)	: 85.2		FIRM DISC.(M3/S)	: 26.1			
MAX. STATIC HEAD (M)	: 486.0		AVE.NET HEAD (M)	: 451.0	TAILWATER LEVEL (M)	: 162.0	

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 469.2		POWER DEVELOP.	: -	TRANSMISSION	: -	
TOTAL COST/KW (US$/KW)	: 1332.9		ACCESS ROAD	: -	LAND/RESETTLEMENT	: -	
TOTAL COST/KWH (US$/KWH)	: 0.532						

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.095						

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 2-008-22-83-0-1

SCHEME	: MATUNO	WATER RESOURCES REGION	: II		
RIVER SYSTEM	: CAGAYAN	PROVINCE	: NUEVA VIZCAYA	COORDINATES	: N16-24-40 E121-03-20
STREAM	: MATUNO	CATCHMENT AREA (KM2)	: 593.0	STUDY LEVEL	: FEASIBILITY STUDY

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR								
PLANT FACTOR ASSUMED	: 0.33		DEVELPM'T RATIO	: -					
NO.OF SUB FACILITIES	: SUBDAM ; 0		INTAKE	; 0	SADDLE DAM	; 0			
RESERVOIR									
LEVELS (EL,M)	: FSL ; 520.0		MOL	; 480.0	AVE.OPERATING LEVEL	; -			
STORAGE (MIL M3)	: GROSS ; 137.0		ACTIVE	; 97.0	DEAD	; 40.0	SEDIMENT	: 0.35	
MAIN DAM/WEIR									
TYPE	: ROCKFILL		CREST EL (M)	: 526.0	CREST LENGTH (M)	: 510.0			
DAM HEIGHT (M)	: 141.0		DAM VOL (MIL M3)	: 8.0	GEOLOGICAL CLASS	: -			
SPILLWAY									
TYPE	: OPEN CHUTE,GATED		CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -			
DESIGN FLOOD (M3/S)	: 7600.0		GATES (TON)	: -	GATE DIMENSION (M)	:12.0X16.0X4			
WATERWAY									
HEADRACE TYPE	: PRESSURE TUNNEL		NUMBER	: 1	LENGTH (M)	: 5650.0	DIA.(M)	: 6.4	
H/R SURGETANK TYPE	: SURGE TANK		NUMBER	: -	HEIGHT (M)	: 100.0	DIA.(M)	: 11.2	
PENSTOCK TYPE	: UNDERGROUND		NUMBER	: 1	LENGTH (M)	: 430.0	DIA.(M)	: 6.4	
			STEEL LINER (TON)	: -					
TAILRACE TYPE	: CONCRETE CONDUIT		NUMBER	: 1	CONDUIT LENGTH (M)	: 933.0	WIDTH (M)	: 13.8	
POWERHOUSE									
TYPE	: SEMI-UNDERGROUND		SPACIAL VOL.(M3)	: 32380.					
POWER EQUIPMENT									
TYPE	: FRANCIS		NO.OF UNITS	: 2	UNIT CAPACITY (MW)	: 100.0			
TRANSMISSION									
SUBSTATION	: SOLANO		NO.OF CIRCUITS	: 2	LENGTH (KM)	: -	K V	: 230D	
ACCESS ROAD									
LENGTH (KM)	: -		FROM						
LAND/RESETTLEMENT									
LAND SUBMERGED (HA)	: -								

POWER

INSTALLED CAPACITY (MW)	: 180.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 59.4		
ANNUAL TOTAL ENERGY (GWH)	: 528.0	FIRM ENERGY (GWH)	: 354.0	SECOND.ENERGY (GWH)	: 174.0		
MAX. DISCHARGE (M3/S)	: 110.0	FIRM DISC.(M3/S)	: 36.3				
MAX. STATIC HEAD (M)	: 220.0	AVE.NET HEAD (M)	: 198.8	TAILWATER LEVEL (M)	: 300.0		

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 267.0	POWER DEVELOP.	: -	TRANSMISSION	: -		
TOTAL COST/KW (US$/KW)	: 1483.3	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -		
TOTAL COST/KWH (US$/KWH)	: 0.561						

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.100						

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 2-008-29-84-0-1

SCHEME	: CASECNAN TRANS BASIN DIVERSION	WATER RESOURCES REGION	: II		
RIVER SYSTEM	: CAGAYAN	PROVINCE	: QUIRINO	COORDINATES	: N16-03-04 E121-27-31
STREAM	: CASECNAN	CATCHMNT AREA (KM2)	: 1150.0	STUDY LEVEL	: COMMITTED

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR						
PLANT FACTOR ASSUMED	: 0.59	DEVELPM'T RATIO	: -				
NO.OF SUB FACILITIES	: SUBDAM ; 0	INTAKE	; 0	SADDLE DAM	; 0		
RESERVOIR							
LEVELS (EL,M)	: FSL ; 424.5	MOL	; 382.0	AVE.OPERATING LEVEL	; -		
STORAGE (MIL M3)	: GROSS ; 2213.0	ACTIVE	; 1183.0	DEAD	; 1030.0	SEDIMENT	: 206.0
MAIN DAM/WEIR							
TYPE	: ROCKFILL	CREST EL (M)	: 432.0	CREST LENGTH (M)	: 868.6		
DAM HEIGHT (M)	: 197.0	DAM VOL (MIL M3)	: 27.7	GEOLOGICAL CLASS	: -		
SPILLWAY							
TYPE	: OPEN CHUTE,GATED	CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -		
DESIGN FLOOD (M3/S)	: 12226.0	GATES (TON)	: -	GATE DIMENSION (M)	:15.0X15.5X6		
WATERWAY							
HEADRACE TYPE	: PRESSURE TUNNEL	NUMBER	: 1	LENGTH (M)	:21147.0	DIA.(M)	: 6.3
H/R SURGETANK TYPE	: SURGE TANK	NUMBER	: -	HEIGHT (M)	: 95.0	DIA.(M)	: 14.2
PENSTOCK TYPE	: OPEN-AIR	NUMBER	: 1	LENGTH (M)	: 665.0	DIA.(M)	: 5.9
		STEEL LINER (TON)	: -				
TAILRACE TYPE	: -	NUMBER	: -	CONDUIT LENGTH (M)	: -	WIDTH (M)	: -
POWERHOUSE							
TYPE	: OPEN/	SPACIAL VOL.(M3)	:27146./20355/4875				
POWER EQUIPMENT							
TYPE	:FRANCIS/FRANCIS/KAPLAN	NO.OF UNITS	: 3/2/1	UNIT CAPACITY (MW)	: 57.8/55.0/12.0		
TRANSMISSION							
SUBSTATION	: SAN JOSE	NO.OF CIRCUITS	: 2	LENGTH (KM)	: -	K V	: 230D
ACCESS ROAD							
LENGTH (KM)	: -	FROM					
LAND/RESETTLEMENT							
LAND SUBMERGED (HA)	: -						

POWER

INSTALLED CAPACITY (MW)	: 268.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 158.1
ANNUAL TOTAL ENERGY (GWH)	: 1379.0	FIRM ENERGY (GWH)	: 1051.0	SECOND.ENERGY (GWH)	: 328.0
MAX. DISCHARGE (M3/S)	: 110.0	FIRM DISC.(M3/S)	: 64.9		
MAX. STATIC HEAD (M)	: 208.5	AVE.NET HEAD (M)	: 80.0	TAILWATER LEVEL (M)	: 216.0

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 445.8	POWER DEVELOP.	: -	TRANSMISSION	: -
TOTAL COST/KW (US$/KW)	: 1663.4	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -
TOTAL COST/KWH (US$/KWH)	: 0.348				

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.062

SCHEME	: SAN ROQUE		WATER RESOURCES REGION	: III			
RIVER SYSTEM	: AGNO		PROVINCE	: PANGASINAN	COORDINATES	: N16-07-54	E120-41-00
STREAM	: AGNO		CATCHMENT AREA (KM2)	: 1250.0	STUDY LEVEL	: FEASIBILITY STUDY	

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR								
PLANT FACTOR ASSUMED	: 0.355		DEVELPM'T RATIO	: -					
NO.OF SUB FACILITIES	: SUBDAM	; 0	INTAKE	; 0	SADDLE DAM	; 0			
RESERVOIR									
LEVELS (EL,M)	: FSL	; 290.0	MOL	; 225.0	AVE.OPERATING LEVEL	;			
STORAGE (MIL M3)	: GROSS	; 99.0	ACTIVE	; 670.0	DEAD	; 320.0	SEDIMENT	:	-
MAIN DAM/WEIR									
TYPE	: GRAVEL FILL		CREST EL (M)	: 307.0	CREST LENGTH (M)	: 1130.0			
DAM HEIGHT (M)	: 210.0		DAM VOL (MIL M3)	: 43.1	GEOLOGICAL CLASS	: -			
SPILLWAY									
TYPE	: OPEN CHUTE,GATED		CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -			
DESIGN FLOOD (M3/S)	: 15600.0		GATES (TON)	: -	GATE DIMENSION (M)	:15.0×15.0×6			
WATERWAY									
HEADRACE TYPE	: PRESSURE TUNNEL		NUMBER	: 1			DIA.(M)	:	8.2
H/R SURGETANK TYPE	: SURGE TANK		NUMBER	: 1	LENGTH (M)	: 722.0	DIA.(M)	:	20.0
PENSTOCK TYPE	: -		NUMBER	: 1	HEIGHT (M)	: 95.0	DIA.(M)	:	8.2/4.7
			STEEL LINER (TON)	: -	LENGTH (M)	: 574.0			
TAILRACE TYPE	: -		NUMBER	: -			WIDTH (M)	:	-
POWERHOUSE					CONDUIT LENGTH (M)	: -			
TYPE	: SHAFT		SPACIAL VOL.(M3)	: 37865.					
POWER EQUIPMENT									
TYPE	: FRANCIS		NO.OF UNITS	: 3	UNIT CAPACITY (MW)	: 150.0			
TRANSMISSION							K V	:	230D
SUBSTATION	: SAN MANUEL		NO.OF CIRCUITS	: 2	LENGTH (KM)	: 9.0			
ACCESS ROAD									
LENGTH (KM)	: -		FROM						
LAND/RESETTLEMENT									
LAND SUBMERGED (HA)	: -								

POWER

INSTALLED CAPACITY (MW)	: 390.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 138.5		
ANNUAL TOTAL ENERGY (GWH)	: 1214.0	FIRM ENERGY (GWH)	: 780.0	SECOND.ENERGY (GWH)	: 434.0		
MAX. DISCHARGE (M3/S)	: 165.0	FIRM DISC.(M3/S)	: -				
MAX. STATIC HEAD (M)	: 200.5	AVE.NET HEAD (M)	: 155.2	TAILWATER LEVEL (M)	: 89.5		

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 409.2	POWER DEVELOP.	: -	TRANSMISSION	: -
TOTAL COST/KW (US$/KW)	: 1049.2	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -
TOTAL COST/KWH (US$/KWH)	: 0.378				

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.068

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 3-077-02-83-0-1

SCHEME	: BALOG-BALOG	WATER RESOURCES REGION	: III		
RIVER SYSTEM	: AGNO	PROVINCE	: TARLAC	COORDINATES	: N15-25-51 E120-21-18
STREAM	: TARLAC AND BULSA	CATCHMENT AREA (KM2)	: 283.0	STUDY LEVEL	: FEASIBILITY STUDY

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR								
PLANT FACTOR ASSUMED	: 0.34		DEVELPM'T RATIO	: -					
NO.OF SUB FACILITIES	: SUBDAM ; 0		INTAKE	; 0	SADDLE DAM	; 0			
RESERVOIR									
LEVELS (EL,M)	: FSL ; 240.5		MOL	; 180.0	AVE.OPERATING LEVEL	; -			
STORAGE (MIL M3)	: GROSS ; 625.0		ACTIVE	; 575.0	DEAD	; 50.0	SEDIMENT	: 50.0	
MAIN DAM/WEIR									
TYPE	: EARTH&ROCKFILL		CREST EL (M)	: 245.5	CREST LENGTH (M)	: 940.0			
DAM HEIGHT (M)	: 111.0		DAM VOL (MIL M3)	: 9.8	GEOLOGICAL CLASS	: -			
SPILLWAY									
TYPE	: OPEN CHUTE,GATED		CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -			
DESIGN FLOOD (M3/S)	: 3830.0		GATES (TON)	: -	GATE DIMENSION (M)	:10.0X11.0X3			
WATERWAY									
HEADRACE TYPE	: PRESSURE TUNNEL		NUMBER	: 1	LENGTH (M)	: 370.0	DIA.(M)	: 4.0	
H/R SURGETANK TYPE	: SURGE TANK		NUMBER	: 1	HEIGHT (M)	: 72.0	DIA.(M)	: 9.2	
PENSTOCK TYPE	: SEMI-UNDERGROUND		NUMBER	: 1	LENGTH (M)	: 170.0	DIA.(M)	: 3.6	
			STEEL LINER (TON)	: -					
TAILRACE TYPE	: -		NUMBER	: -	CONDUIT LENGTH (M)	: -	WIDTH (M)	: -	
POWERHOUSE									
TYPE	: OPEN-AIR		SPACIAL VOL.(M3)	: 6598.					
POWER EQUIPMENT									
TYPE	: FRANCIS		NO.OF UNITS	: 3	UNIT CAPACITY (MW)	: 12.8			
TRANSMISSION									
SUBSTATION	: -		NO.OF CIRCUITS	: 2	LENGTH (KM)	: 32.0	K V	: 69	
ACCESS ROAD									
LENGTH (KM)	: -		FROM						
LAND/RESETTLEMENT									
LAND SUBMERGED (HA)	: -								

POWER

INSTALLED CAPACITY (MW)	: 33.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 11.2		
ANNUAL TOTAL ENERGY (GWH)	: 98.5	FIRM ENERGY (GWH)	: 33.0	SECOND.ENERGY (GWH)	: 65.5		
MAX. DISCHARGE (M3/S)	: 36.3	FIRM DISC.(M3/S)	: 12.3				
MAX. STATIC HEAD (M)	: 99.5	AVE.NET HEAD (M)	: 72.6	TAILWATER LEVEL (M)	: 141.0		

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 39.9	POWER DEVELOP.	: -	TRANSMISSION	: -		
TOTAL COST/KW (US$/KW)	: 1209.1	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -		
TOTAL COST/KWH (US$/KWH)	: 0.506						

ECONOMIC PARAMETER

KWH COST (US $/KWH)	: 0.084						

SCHEME : AGOS
RIVER SYSTEM : AGOS
STREAM : AGOS
WATER RESOURCES REGION : IV
PROVINCE : QUEZON
CATCHMENT AREA (KM2) : 867.0
COORDINATES : N14-40-40 E121-32-00
STUDY LEVEL : FEASIBILITY STUDY

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR								
PLANT FACTOR ASSUMED	: 0.51			DEVELPM'T RATIO	: -				
NO.OF SUB FACILITIES	: SUBDAM	; 0		INTAKE	; 0	SADDLE DAM	; 0		
RESERVOIR									
LEVELS (EL,M)	: FSL	; 165.0		MOL	; 128.0	AVE.OPERATING LEVEL	;		
STORAGE (MIL M3)	: GROSS	; 955.0		ACTIVE	; 570.0	DEAD	; 385.0	SEDIMENT	: 17.9
MAIN DAM/WEIR									
TYPE	: ROCKFILL			CREST EL (M)	: 172.0	CREST LENGTH (M)	: 762.0		
DAM HEIGHT (M)	: 172.0			DAM VOL (MIL M3)	: 15.9	GEOLOGICAL CLASS	: -		
SPILLWAY									
TYPE	: OPEN CHUTE/NON-GATED			CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: -		
DESIGN FLOOD (M3/S)	: 10600.0			GATES (TON)	: -	GATE DIMENSION (M)	:14.0X14.5X4		
WATERWAY									
HEADRACE TYPE	: PRESSURE TUNNEL			NUMBER	: 1			DIA.(M)	: 6.8/9.0
H/R SURGETANK TYPE	: -			NUMBER	: -	LENGTH (M)	: 225.8	DIA.(M)	: -
PENSTOCK TYPE	:			NUMBER	: 1	HEIGHT (M)	: -	DIA.(M)	: 6.1
				STEEL LINER (TON)	: -	LENGTH (M)	: 350.0		
TAILRACE TYPE	: -			NUMBER	: -			WIDTH(M)	: -
POWERHOUSE						CONDUIT LENGTH (M)	: -		
TYPE	: SEMI-UNDERGROUND			SPACIAL VOL.(M3)	: 28630.				
POWER EQUIPMENT									
TYPE	: FRANCIS			NO.OF UNITS	: 2	UNIT CAPACITY (MW)	: 78.0		
TRANSMISSION								K V	: 230D
SUBSTATION	: MALAYA			NO.OF CIRCUITS	: -	LENGTH (KM)	: 43.0		
ACCESS ROAD									
LENGTH (KM)	: -			FROM					
LAND/RESETTLEMENT									
LAND SUBMERGED (HA)	: -								

POWER

INSTALLED CAPACITY (MW)	: 140.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 71.4		
ANNUAL TOTAL ENERGY (GWH)	: 622.6	FIRM ENERGY (GWH)	: 335.0	SECOND.ENERGY (GWH)	: 287.6		
MAX. DISCHARGE (M3/S)	: 163.0	FIRM DISC.(M3/S)	: 83.1				
MAX. STATIC HEAD (M)	: 123.0	AVE.NET HEAD (M)	: 102.0	TAILWATER LEVEL (M)	: 42.0		

CONSTRUCTION COST (MIL US$)

TOTAL COST	: 361.4	POWER DEVELOP.	: -	TRANSMISSION	: -
TOTAL COST/KW (US$/KW)	: 2581.4	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -
TOTAL COST/KWH (US$/KWH)	: 0.674				

ECONOMIC PARAMETER

KWH COST (US $/KWH) : 0.121

HYDROPOWER PROJECT CATALOGUE

SCHEME ID NO. 4-007-01-82-0-1

SCHEME	: PANTAY	WATER RESOURCES REGION	: IV		
RIVER SYSTEM	: AGOS	PROVINCE	: RIZAL	COORDINATES :	N14-37-40 E121-25-10
STREAM	: KALIWA	CATCHMENT AREA (KM2)	: 276.0	STUDY LEVEL :	COMMITTED

DEVELOPMENT PLAN

TYPE OF DEVELOPMENT	: RESERVOIR							
PLANT FACTOR ASSUMED	: 0.76		DEVELPM'T RATIO	: -				
NO.OF SUB FACILITIES	: SUBDAM ; 0		INTAKE	; 0	SADDLE DAM	; 0		
RESERVOIR								
LEVELS (EL,M)	: FSL ; 270.0		MOL	; 235.0	AVE.OPERATING LEVEL	; -		
STORAGE (MIL M3)	: GROSS ; -		ACTIVE	; 500.0	DEAD	; -	SEDIMENT	: -
MAIN DAM/WEIR								
TYPE	: ROCKFILL		CREST EL (M)	: 281.0	CREST LENGTH (M)	: 590.0		
DAM HEIGHT (M)	: 143.0		DAM VOL (MIL M3)	: 9.7	GEOLOGICAL CLASS	: -		
SPILLWAY								
TYPE	: FREE OVERFLOW CHUTE		CREST EL.(M)	: -	OVERFLOW WIDTH (M)	: 60.0		
DESIGN FLOOD (M3/S)	: 2800.0		GATES (TON)	: -	GATE DIMENSION (M)	:- X - X		
WATERWAY								
HEADRACE TYPE	: PRESSURE TUNNEL		NUMBER	: 1			DIA.(M)	: 3.3
H/R SURGETANK TYPE	: SURGE TANK		NUMBER	: 1	LENGTH (M)	: 9300.0	DIA.(M)	: 7.5/18.0
PENSTOCK TYPE	: OPEN-AIR		NUMBER	: 1	HEIGHT (M)	: 125.0	DIA.(M)	: 3.0
			STEEL LINER (TON)	: -	LENGTH (M)	: 4300.0		
TAILRACE TYPE	: -		NUMBER	: -			WIDTH (M)	: -
POWERHOUSE					CONDUIT LENGTH (M)	: -		
TYPE	: OPEN-AIR		SPACIAL VOL.(M3)	: 6395.				
POWER EQUIPMENT								
TYPE	: FRANCIS		NO.OF UNITS	: 2	UNIT CAPACITY (MW)	: 14.0		
TRANSMISSION							K V	: -
SUBSTATION	: -		NO.OF CIRCUITS	: -	LENGTH (KM)	: -		
ACCESS ROAD								
LENGTH (KM)	: -		FROM					
LAND/RESETTLEMENT								
LAND SUBMERGED (HA)	: -							

POWER

INSTALLED CAPACITY (MW)	: 23.0	MIN.GUARANT (MW)	: -	FIRM POWER (MW)	: 17.5
ANNUAL TOTAL ENERGY (GWH)	: 153.0	FIRM ENERGY (GWH)	: -	SECOND.ENERGY (GWH)	: -
MAX. DISCHARGE (M3/S)	: 28.8	FIRM DISC.(M3/S)	: 21.9		
MAX. STATIC HEAD (M)	: 136.0	AVE.NET HEAD (M)	: 93.0	TAILWATER LEVEL (M)	: 134.0

CONSTRUCTION COST (MIL US$)

TOTAL COST	: -	POWER DEVELOP.	: -	TRANSMISSION	: -
TOTAL COST/KW (US$/KW)	: -	ACCESS ROAD	: -	LAND/RESETTLEMENT	: -
TOTAL COST/KWH (US$/KWH)	: -				

ECONOMIC PARAMETER

KWH COST (US $/KWH) : -

C-13　開発優先順位解析

****
* PRIORITY RANKING STUDY *
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SYSTEM NAME: LUZON HPPS LUZON GRID
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 A-3

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2307.0	14147.0
1986	2400.0	14714.0
1987	2496.0	15304.0
1988	2605.0	15975.0
1989	2746.0	16841.0
1990	2928.0	17954.0
1991	3090.0	18947.0
1992	3256.0	19964.0
1993	3431.0	21038.0
1994	3618.0	22185.0
1995	3694.0	22653.0
1996	4016.0	24628.0
1997	4229.0	25931.0
1998	4456.0	27326.0
1999	4696.0	28795.0
2000	4954.0	30375.0
2001	5220.0	32009.0
2002	5502.0	33738.0
2003	5793.0	35523.0
2004	6105.0	37433.0
2005	6429.0	39422.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	814.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	5	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES:

DEVELOPMENT GRADE:

- 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
- 8 - GAS TURBINE

TABLE OF EXISTING THERMAL POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
2	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
3	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-2	GEO-THERMAL 2	9	2	1997	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-1	GEO-THERMAL 1	9	2	1995	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-4	GEO-THERMAL 4	9	2	2005	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-3	GEO-THERMAL 3	9	2	2003	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-2	COAL THERMAL 2	9	4	1998	300000.	1	0.700	LUZON GRID
25	1- 1-89-99-1	COAL THERMAL 1	9	4	1996	300000.	1	0.700	LUZON GRID
26	1- 1-89-99-4	COAL THERMAL 4	9	4	2002	600000.	1	0.700	LUZON GRID
27	1- 1-89-99-3	COAL THERMAL 3	9	4	2000	600000.	1	0.700	LUZON GRID
28	1- 1-89-99-5	COAL THERMAL 5	9	4	2004	300000.	1	0.700	LUZON GRID

NOTES:

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

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534.9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	361.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	SUPO	141.8	0.32	258.0	3.9	0	0	6	5
11	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
12	6	1- 1- 1	6	SISIRITAN	417.6	0.26	610.5	9.2	0	0	6	5
13	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
14	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
15	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
16	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
17	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
18	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
19	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
20	18	1- 1- 2	1	BAKUN	33.0	0.35	35.4	0.5	0	0	6	4
21	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
22	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
23	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
24	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
25	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
26	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
27	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
28	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
29	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
30	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
31	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
32	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
33	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

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* SUMMARY OF PRIORITY RANKING *
****

LIST OF SCREENED PROJECTS

NO	NAME	TYPE	INST. YEAR	CONNE. YEAR	CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	PRESENT WORTH (MIL US$)
STUDY AREA : 1- 1 LUZON GRID									
01	GEO-THERMAL 1	2	1995	-	330.0	0.73	495.0	16.5	227.3
02	BINONGAN	6	1995	-	175.0	0.41	269.2	4.0	115.0
03	COAL THERMAL 1	4	1996	-	300.0	0.70	360.0	42.1	209.9
04	ABRA	1	1996	-	10.9	0.41	21.5	0.3	7.7
05	GEO-THERMAL 2	2	1997	-	330.0	0.73	495.0	16.5	181.2
06	COAL THERMAL 2	4	1998	-	300.0	0.70	360.0	42.1	167.4
07	SAN ROQUE	6	1999	-	390.0	0.32	409.2	6.1	111.1
08	COAL THERMAL 3	4	2000	-	600.0	0.70	720.0	84.3	266.8
09	SALTAN	1	2000	-	12.6	0.46	25.2	0.4	5.7
10	DIDUYON	6	2001	-	352.0	0.29	469.2	7.0	101.5
11	COAL THERMAL 4	4	2002	-	600.0	0.70	720.0	84.3	212.7
12	AGNO-3	1	2002	-	9.5	0.48	21.9	0.3	3.9
13	GEO-THERMAL 3	2	2003	-	330.0	0.73	495.0	16.5	91.8
14	MATUNO	6	2003	-	180.0	0.30	267.0	4.0	46.0
15	COAL THERMAL 5	4	2004	-	300.0	0.70	360.0	42.1	84.8
16	SUPO	6	2004	-	141.8	0.32	258.0	3.9	39.7
17	GEO-THERMAL 4	2	2005	-	330.0	0.73	495.0	16.5	73.2

****
* PRIORITY RANKING STUDY *
****

SYSTEM NAME: LUZON HPPS LUZON GRID
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 A-4

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2307.0	14147.0
1986	2400.0	14714.0
1987	2496.0	15304.0
1988	2605.0	15975.0
1989	2746.0	16841.0
1990	2928.0	17954.0
1991	3090.0	18947.0
1992	3256.0	19964.0
1993	3431.0	21038.0
1994	3618.0	22185.0
1995	3694.0	22653.0
1996	4016.0	24628.0
1997	4229.0	25931.0
1998	4456.0	27326.0
1999	4696.0	28795.0
2000	4954.0	30375.0
2001	5220.0	32009.0
2002	5502.0	33736.0
2003	5793.0	35523.0
2004	6105.0	37433.0
2005	6429.0	39422.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	814.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES:

DEVELOPMENT GRADE:

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
8 - GAS TURBINE

TABLE OF EXISTING THERMAL POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
2	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
3	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-1	GEO-THERMAL 1	9	2	1996	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-2	GEO-THERMAL 2	9	2	1998	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-3	GEO-THERMAL 3	9	2	2002	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-4	GEO-THERMAL 4	9	2	2003	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-1	COAL THERMAL 1	9	4	1995	300000.	1	0.700	LUZON GRID
25	1- 1-89-99-2	COAL THERMAL 2	9	4	1999	600000.	1	0.700	LUZON GRID
26	1- 1-89-99-3	COAL THERMAL 3	9	4	2001	600000.	1	0.700	LUZON GRID
27	1- 1-89-99-4	COAL THERMAL 4	9	4	2004	600000.	1	0.700	LUZON GRID

NOTES:

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

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534.9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	361.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	SUPO	141.8	0.32	258.0	3.9	0	0	6	5
11	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
12	6	1- 1- 1	6	SISIRITAN	417.6	0.26	610.5	9.2	0	0	6	5
13	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
14	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
15	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
16	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
17	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
18	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
19	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
20	18	1- 1- 2	1	BAKUM	33.0	0.35	35.4	0.5	0	0	6	4
21	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
22	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
23	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
24	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
25	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
26	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
27	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
28	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
29	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
30	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
31	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
32	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
33	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

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SUMMARY OF PRIORITY RANKING
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LIST OF SCREENED PROJECTS

NO	N A M E	TYPE	INST. YEAR	CONNE. YEAR	CAPA-CITY (MW)	ASSUMED MAXIMUM P.F.	C O S T CAPITAL (MIL US$)	C O S T OPERATION (MIL US$)	PRESENT WORTH (MIL US$)
STUDY AREA : 1- 1 LUZON GRID									
01	COAL THERMAL 1	4	1995	-	300.0	0.70	360.0	42.1	235.1
02	BINONGAN	6	1995	-	175.0	0.41	269.2	4.0	115.0
03	GEO-THERMAL 1	2	1996	-	330.0	0.73	495.0	16.5	203.0
04	SAN ROQUE	6	1997	-	390.0	0.32	409.2	6.1	139.4
05	GEO-THERMAL 2	2	1998	-	330.0	0.73	495.0	16.5	161.8
06	COAL THERMAL 2	4	1999	-	600.0	0.70	720.0	84.3	298.8
07	IBULAO	1	1999	-	16.5	0.44	29.3	0.4	7.4
08	AMBURAYAN	1	2000	-	64.0	0.34	75.4	1.1	17.0
09	COAL THERMAL 3	4	2001	-	600.0	0.70	720.0	84.3	238.2
10	GEO-THERMAL 3	2	2002	-	330.0	0.73	495.0	16.5	102.8
11	TANUDAN	1	2002	-	24.8	0.46	34.0	0.5	6.1
12	GEO-THERMAL 4	2	2003	-	330.0	0.73	495.0	16.5	91.8
13	COAL THERMAL 4	4	2004	-	600.0	0.70	720.0	84.3	169.6
14	AGBULU	6	2004	-	216.2	0.31	403.0	6.0	62.0
15	DIDUYON	6	2005	-	352.0	0.29	469.2	7.0	64.4

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* PRIORITY RANKING STUDY *
****

SYSTEM NAME: LUZON HPPS LUZON GRID
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-8

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2307.0	14147.0
1986	2400.0	14714.0
1987	2496.0	15304.0
1988	2605.0	15975.0
1989	2746.0	16841.0
1990	2928.0	17954.0
1991	3090.0	18947.0
1992	3256.0	19964.0
1993	3431.0	21038.0
1994	3618.0	22185.0
1995	3694.0	22653.0
1996	3966.0	24318.0
1997	4124.0	25290.0
1998	4289.0	26302.0
1999	4461.0	27354.0
2000	4639.0	28449.0
2001	4825.0	29586.0
2002	5018.0	30770.0
2003	5219.0	32000.0
2004	5427.0	33280.0
2005	5644.0	34612.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	814.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES:

DEVELOPMENT GRADE:

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
8 - GAS TURBINE

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* TABLE OF EXISTING THERMAL POWER PLANTS *
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NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
2	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
3	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-1	GEO-THERMAL 1	9	2	1995	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-2	GEO-THERMAL 2	9	2	1996	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-3	GEO-THERMAL 3	9	2	2001	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-4	GEO-THERMAL 4	9	2	2002	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-1	COAL THERMAL 1	9	4	1998	300000.	1	0.700	LUZON GRID
25	1- 1-89-99-2	COAL THERMAL 2	9	4	2000	300000.	1	0.700	LUZON GRID
26	1- 1-89-99-3	COAL THERMAL 3	9	4	2002	300000.	1	0.700	LUZON GRID
27	1- 1-89-99-4	COAL THERMAL 4	9	4	2004	600000.	1	0.700	LUZON GRID

NOTES: DEVELOPMENT GRADE:
- 0 - EXISTING
- 1 - UNDER CONSTRACTION
- 2 - COMMITTED
- 9 - CANDIDATE OF FIXED INST. YEAR

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	C O S T CAPITAL (MIL US$)	C O S T OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534:9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	361.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	SUPO	141.8	0.32	258.0	3.9	0	0	6	5
11	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
12	6	1- 1- 1	6	SISIRITAN	417.6	0.25	610.5	9.2	0	0	6	5
13	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
14	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
15	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
16	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
17	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
18	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
19	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
20	18	1- 1- 2	1	BAKUM	33.0	0.35	35.4	0.5	0	0	6	4
21	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
22	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
23	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
24	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
25	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
26	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
27	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
28	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
29	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
30	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
31	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
32	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
33	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

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* S U M M A R Y O F P R I O R I T Y R A N K I N G *
****

LIST OF SCREENED PROJECTS

NO	N A M E	TYPE	INST. YEAR	CONNE. YEAR	CAPACITY (MW)	ASSUMED MAXIMUM P.F.	C O S T CAPITAL (MIL US$)	C O S T OPERATION (MIL US$)	PRESENT WORTH (MIL US$)
STUDY AREA : 1- 1 LUZON GRID									
01	GEO-THERMAL 1	2	1995	-	330.0	0.73	495.0	16.5	227.3
02	CHICO-1R	1	1995	-	27.3	0.46	40.7	0.6	16.2
03	GEO-THERMAL 2	2	1996	-	330.0	0.73	495.0	16.5	203.0
04	AMBURAYAN	1	1997	-	64.0	0.34	75.4	1.1	24.0
05	COAL THERMAL 1	4	1998	-	300.0	0.70	360.0	42.1	167.4
06	SAN ROQUE	6	1999	-	390.0	0.32	409.2	6.1	111.1
07	COAL THERMAL 2	4	2000	-	300.0	0.70	360.0	42.1	133.4
08	GEO-THERMAL 3	2	2001	-	330.0	0.73	495.0	16.5	115.2
09	COAL THERMAL 3	4	2002	-	300.0	0.70	360.0	42.1	106.4
10	GEO-THERMAL 4	2	2002	-	330.0	0.73	495.0	16.5	102.8
11	PASIL	1	2003	-	20.2	0.46	30.0	0.4	4.8
12	COAL THERMAL 4	4	2004	-	600.0	0.70	720.0	84.3	169.6
13	WAWA	6	2005	-	61.0	0.37	175.2	2.6	24.1

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* PRIORITY RANKING STUDY *
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SYSTEM NAME: LUZON HPPS LUZON GRID
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

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2307.0	14147.0
1986	2400.0	14714.0
1987	2496.0	15304.0
1988	2605.0	15975.0
1989	2746.0	16841.0
1990	2928.0	17954.0
1991	3090.0	18947.0
1992	3256.0	19964.0
1993	3431.0	21038.0
1994	3618.0	22185.0
1995	3694.0	22653.0
1996	3966.0	24318.0
1997	4124.0	25290.0
1998	4289.0	26302.0
1999	4461.0	27354.0
2000	4639.0	28449.0
2001	4825.0	29586.0
2002	5018.0	30770.0
2003	5219.0	32000.0
2004	5427.0	33280.0
2005	5644.0	34612.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	814.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES:

DEVELOPMENT GRADE:

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
8 - GAS TURBINE

TABLE OF EXISTING THERMAL POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
2	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
3	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-2	GEO-THERMAL 2	9	2	1996	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-1	GEO-THERMAL 1	9	2	1995	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-4	GEO-THERMAL 4	9	2	2002	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-3	GEO-THERMAL 3	9	2	1999	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-2	COAL THERMAL 2	9	4	2001	600000.	1	0.700	LUZON GRID
25	1- 1-89-99-1	COAL THERMAL 1	9	4	1998	300000.	1	0.700	LUZON GRID
26	1- 1-89-99-3	COAL THERMAL 3	9	4	2004	600000.	1	0.700	LUZON GRID

NOTES:

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

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	C O S T CAPITAL (MIL US$)	C O S T OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534.9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	361.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	SUPO	141.8	0.32	258.0	3.9	0	0	6	5
11	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
12	6	1- 1- 1	6	SISIRITAN	417.6	0.26	610.5	9.2	0	0	6	5
13	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
14	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
15	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
16	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
17	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
18	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
19	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
20	18	1- 1- 2	1	BAKUM	33.0	0.35	35.4	0.5	0	0	6	4
21	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
22	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
23	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
24	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
25	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
26	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
27	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
28	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
29	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
30	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
31	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
32	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
33	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

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* SUMMARY OF PRIORITY RANKING *
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LIST OF SCREENED PROJECTS

NO	NAME	TYPE	INST. YEAR	CONNE. YEAR	CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	PRESENT WORTH (MIL US$)
STUDY AREA : 1- 1 LUZON GRID									
01	GEO-THERMAL 1	2	1995	-	330.0	0.73	495.0	16.5	227.3
02	CHICO-1R	1	1995	-	27.3	0.46	40.7	0.6	16.2
03	GEO-THERMAL 2	2	1996	-	330.0	0.73	495.0	16.5	203.0
04	AMBURAYAN	1	1997	-	64.0	0.34	75.4	1.1	24.0
05	COAL THERMAL 1	4	1998	-	300.0	0.70	360.0	42.1	167.4
06	GEO-THERMAL 3	2	1999	-	330.0	0.73	495.0	16.5	144.5
07	SAN ROQUE	6	2000	-	390.0	0.32	409.2	6.1	99.1
08	COAL THERMAL 2	4	2001	-	600.0	0.70	720.0	84.3	238.2
09	GEO-THERMAL 4	2	2002	-	330.0	0.73	495.0	16.5	102.8
10	PASIL	1	2003	-	20.2	0.46	30.0	0.4	4.8
11	COAL THERMAL 3	4	2004	-	600.0	0.70	720.0	84.3	169.6
12	WAWA	6	2005	-	61.0	0.37	175.2	2.6	24.1

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* PRIORITY RANKING STUDY *
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SYSTEM NAME: LUZON HPPS LUZON GRID
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 C-7

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2308.0	14148.0
1986	2400.0	14714.0
1987	2496.0	15303.0
1988	2595.0	15914.0
1989	2699.0	16551.0
1990	2807.0	17213.0
1991	2919.0	17902.0
1992	3036.0	18618.0
1993	3158.0	19363.0
1994	3284.0	20138.0
1995	3415.0	20943.0
1996	3586.0	21991.0
1997	3765.0	23090.0
1998	3954.0	24244.0
1999	4152.0	25457.0
2000	4359.0	26729.0
2001	4577.0	28066.0
2002	4806.0	29469.0
2003	5046.0	30942.0
2004	5298.0	32488.0
2005	5563.0	34113.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	814.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES:

DEVELOPMENT GRADE:

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
8 - GAS TURBINE

TABLE OF EXISTING THERMAL POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
2	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
3	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-2	GEO-THERMAL 2	9	2	2001	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-1	GEO-THERMAL 1	9	2	1997	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-4	GEO-THERMAL 4	9	2	2004	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-3	GEO-THERMAL 3	9	2	2002	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-2	COAL THERMAL 2	9	4	1998	300000.	1	0.700	LUZON GRID
25	1- 1-89-99-1	COAL THERMAL 1	9	4	1996	300000.	1	0.700	LUZON GRID
26	1- 1-89-99-4	COAL THERMAL 4	9	4	2002	300000.	1	0.700	LUZON GRID
27	1- 1-89-99-3	COAL THERMAL 3	9	4	2000	300000.	1	0.700	LUZON GRID
28	1- 1-89-99-5	COAL THERMAL 5	9	4	2005	300000.	1	0.700	LUZON GRID

NOTES:

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

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	C O S T CAPITAL (MIL US$)	C O S T OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534.9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	361.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	SUPO	141.8	0.32	258.0	3.9	0	0	6	5
11	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
12	6	1- 1- 1	6	SISIRITAN	417.6	0.26	610.5	9.2	0	0	6	5
13	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
14	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
15	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
16	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
17	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
18	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
19	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
20	18	1- 1- 2	1	BAKUM	33.0	0.35	35.4	0.5	0	0	6	4
21	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
22	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
23	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
24	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
25	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
26	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
27	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
28	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
29	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
30	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
31	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
32	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
33	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

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* SUMMARY OF PRIORITY RANKING *
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LIST OF SCREENED PROJECTS

NO	NAME	TYPE	INST. YEAR	CONNE. YEAR	CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	PRESENT WORTH (MIL US$)
STUDY AREA : 1- 1 LUZON GRID									
01	COAL THERMAL 1	4	1996	-	300.0	0.70	360.0	42.1	209.9
02	GEO-THERMAL 1	2	1997	-	330.0	0.73	495.0	16.5	181.2
03	COAL THERMAL 2	4	1998	-	300.0	0.70	360.0	42.1	167.4
04	COAL THERMAL 3	4	2000	-	300.0	0.70	360.0	42.1	133.4
05	CHICO-2R	1	2000	-	34.5	0.46	43.3	0.6	9.8
06	GEO-THERMAL 2	2	2001	-	330.0	0.73	495.0	16.5	115.2
07	LUYA	1	2001	-	40.8	0.35	60.3	0.9	12.2
08	GEO-THERMAL 3	2	2002	-	330.0	0.73	495.0	16.5	102.8
09	COAL THERMAL 4	4	2002	-	300.0	0.70	360.0	42.1	106.4
10	SAN ROQUE	6	2003	-	390.0	0.32	409.2	6.1	70.5
11	GEO-THERMAL 4	2	2004	-	330.0	0.73	495.0	16.5	82.0
12	ETEB	6	2004	-	107.2	0.30	225.8	3.4	34.7
13	COAL THERMAL 5	4	2005	-	300.0	0.70	360.0	42.1	75.7

****
* PRIORITY RANKING STUDY *
****

SYSTEM NAME: LUZON HPPS LUZON GRID
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 C-8

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2308.0	14148.0
1986	2400.0	14714.0
1987	2496.0	15303.0
1988	2595.0	15914.0
1989	2699.0	16551.0
1990	2807.0	17213.0
1991	2919.0	17902.0
1992	3036.0	18618.0
1993	3158.0	19363.0
1994	3284.0	20138.0
1995	3415.0	20943.0
1996	3586.0	21991.0
1997	3765.0	23090.0
1998	3954.0	24244.0
1999	4152.0	25457.0
2000	4359.0	26729.0
2001	4577.0	28066.0
2002	4806.0	29469.0
2003	5046.0	30942.0
2004	5298.0	32488.0
2005	5563.0	34113.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	614.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES: DEVELOPMENT GRADE:

- 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
- 8 - GAS TURBINE

TABLE OF EXISTING THERMAL POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
2	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
3	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-1	GEO-THERMAL 1	9	2	1996	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-2	GEO-THERMAL 2	9	2	1999	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-3	GEO-THERMAL 3	9	2	2001	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-4	GEO-THERMAL 4	9	2	2003	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-1	COAL THERMAL 1	9	4	1998	300000.	1	0.700	LUZON GRID
25	1- 1-89-99-2	COAL THERMAL 2	9	4	2000	300000.	1	0.700	LUZON GRID
26	1- 1-89-99-3	COAL THERMAL 3	9	4	2002	600000.	1	0.700	LUZON GRID
27	1- 1-89-99-4	COAL THERMAL 4	9	4	2004	300000.	1	0.700	LUZON GRID

NOTES:

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

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534.9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	361.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
11	6	1- 1- 1	6	SISIRITAN	417.6	0.26	610.5	9.2	0	0	6	5
12	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
13	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
14	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
15	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
16	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
17	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
18	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
19	18	1- 1- 2	1	BAKUM	33.0	0.35	35.4	0.5	0	0	6	4
20	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
21	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
22	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
23	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
24	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
25	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
26	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
27	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
28	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
29	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
30	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
31	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
32	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

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* SUMMARY OF PRIORITY RANKING *
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LIST OF SCREENED PROJECTS

NO	NAME	TYPE	INST. YEAR	CONNE. YEAR	CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	PRESENT WORTH (MIL US$)
STUDY AREA : 1- 1 LUZON GRID									
01	GEO-THERMAL 1	2	1996	-	330.0	0.73	495.0	16.5	203.0
02	MATUNO	6	1997	-	180.0	0.30	267.0	4.0	90.9
03	COAL THERMAL 1	4	1998	-	300.0	0.70	360.0	42.1	167.4
04	GEO-THERMAL 2	2	1999	-	330.0	0.73	495.0	16.5	144.5
05	COAL THERMAL 2	4	2000	-	300.0	0.70	360.0	42.1	133.4
06	GEO-THERMAL 3	2	2001	-	330.0	0.73	495.0	16.5	115.2
07	COAL THERMAL 3	4	2002	-	600.0	0.70	720.0	84.3	212.7
08	GEO-THERMAL 4	2	2003	-	330.0	0.73	495.0	16.5	91.8
09	COAL THERMAL 4	4	2004	-	300.0	0.70	360.0	42.1	84.8
10	SAN ROQUE	6	2005	-	390.0	0.32	409.2	6.1	56.2

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* PRIORITY RANKING STUDY *
****

SYSTEM NAME: LUZON HPPS LUZON GRID
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 D-5

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2308.0	14148.0
1986	2400.0	14714.0
1987	2496.0	15303.0
1988	2595.0	15914.0
1989	2699.0	16551.0
1990	2807.0	17213.0
1991	2919.0	17902.0
1992	3036.0	18618.0
1993	3158.0	19363.0
1994	3284.0	20138.0
1995	3415.0	20943.0
1996	3552.0	21781.0
1997	3694.0	22652.0
1998	3842.0	23558.0
1999	3995.0	24501.0
2000	4155.0	25481.0
2001	4321.0	26500.0
2002	4494.0	27561.0
2003	4674.0	28663.0
2004	4861.0	29810.0
2005	5055.0	31002.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	814.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES:

DEVELOPMENT GRADE:

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
8 - GAS TURBINE

TABLE OF EXISTING THERMAL POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
2	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
3	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-2	GEO-THERMAL 2	9	2	2000	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-1	GEO-THERMAL 1	9	2	1996	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-4	GEO-THERMAL 4	9	2	2003	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-3	GEO-THERMAL 3	9	2	2002	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-2	COAL THERMAL 2	9	4	2001	300000.	1	0.700	LUZON GRID
25	1- 1-89-99-1	COAL THERMAL 1	9	4	1998	300000.	1	0.700	LUZON GRID
26	1- 1-89-99-3	COAL THERMAL 3	9	4	2004	300000.	1	0.700	LUZON GRID

NOTES:

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

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534.9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	361.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	SUPO	141.8	0.32	258.0	3.9	0	0	6	5
11	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
12	6	1- 1- 1	6	SISIRITAN	417.6	0.26	610.5	9.2	0	0	6	5
13	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
14	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
15	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
16	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
17	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
18	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
19	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
20	18	1- 1- 2	1	BAKUM	33.0	0.35	35.4	0.5	0	0	6	4
21	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
22	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
23	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
24	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
25	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
26	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
27	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
28	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
29	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
30	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
31	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
32	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
33	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

****
* S U M M A R Y O F P R I O R I T Y R A N K I N G *
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LIST OF SCREENED PROJECTS

NO	N A M E	TYPE	INST. YEAR	CONNE. YEAR	CAPA-CITY (MW)	ASSUMED MAXIMUM P.F.	C O S T CAPITAL (MIL US$)	C O S T OPERATION (MIL US$)	PRESENT WORTH (MIL US$)
STUDY AREA : 1- 1 LUZON GRID									
01	GEO-THERMAL 1	2	1996	-	330.0	0.73	495.0	16.5	203.0
02	COAL THERMAL 1	4	1998	-	300.0	0.70	360.0	42.1	167.4
03	BINONGAN	6	1999	-	175.0	0.41	269.2	4.0	73.1
04	GEO-THERMAL 2	2	2000	-	330.0	0.73	495.0	16.5	129.0
05	COAL THERMAL 2	4	2001	-	300.0	0.70	360.0	42.1	119.1
06	GEO-THERMAL 3	2	2002	-	330.0	0.73	495.0	16.5	102.8
07	TANUDAN	1	2002	-	24.8	0.46	34.0	0.5	6.1
08	GEO-THERMAL 4	2	2003	-	330.0	0.73	495.0	16.5	91.8
09	COAL THERMAL 3	4	2004	-	300.0	0.70	360.0	42.1	84.8
10	SAN ROQUE	6	2005	-	390.0	0.32	409.2	6.1	56.2

****
* PRIORITY RANKING STUDY *
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SYSTEM NAME: LUZON HPPS LUZON GRID
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 D-6

DEMAND CURVE

YEAR	POWER(MW)	ENERGY(GWH)
1985	2308.0	14148.0
1986	2400.0	14714.0
1987	2496.0	15303.0
1988	2595.0	15914.0
1989	2699.0	16551.0
1990	2807.0	17213.0
1991	2919.0	17902.0
1992	3036.0	18618.0
1993	3158.0	19363.0
1994	3284.0	20138.0
1995	3415.0	20943.0
1996	3552.0	21781.0
1997	3694.0	22652.0
1998	3842.0	23558.0
1999	3995.0	24501.0
2000	4155.0	25481.0
2001	4321.0	26500.0
2002	4494.0	27561.0
2003	4674.0	28663.0
2004	4861.0	29810.0
2005	5055.0	31002.0

TABLE OF EXISTING - HYDRO POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	TYPE PLANT	COMIS. YEAR	INSTALL CAPACITY (MW)	GENERATED ENERGY (GWH)	PLANT FACTOR	NO.OF UNIT	REMARK :
1	1- 1- 2- 8-1	MAGAT	0	6	1983	360.00	814.40	0.26	4	EXISTING
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	0	6	1967	228.00	515.70	0.26	7	EXISTING
4	1- 1- 3-25-4	PANTABANGAN	0	6	1977	100.00	226.20	0.26	2	EXISTING
5	1- 1- 3-25-5	MASIWAY	0	6	1981	12.00	27.10	0.26	1	EXISTING
6	1- 1- 3-77-1	AMBUKLAO	0	6	1956	75.00	169.70	0.26	3	EXISTING
7	1- 1- 3-77-2	BINGA	0	6	1960	100.00	226.20	0.26	4	EXISTING
8	1- 1- 4- 7-4	PANTAI	2	6	1993	23.00	154.00	0.76	2	COMMITTED
9	1- 1- 4-15-1	CALIRAYA	0	6	1945	32.00	72.40	0.26	4	EXISTING
10	1- 1- 4-15-2	BOTOCAN	0	6	1948	17.00	38.50	0.26	3	EXISTING
11	1- 1- 4-15-3	KALAYAAN	0	6	1983	300.00	678.60	0.26	2	EXISTINGE PUMPED STORAGE
12	1- 1- 5-48-1	BUHI-BARIT	0	6	1957	1.80	4.10	0.26	1	EXISTING
13	1- 1- 5-91-2	CAWAYAN	0	6	1959	0.40	0.90	0.26	1	EXISTING

NOTES: DEVELOPMENT GRADE:

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
8 - GAS TURBINE

TABLE OF EXISTING THERMAL POWER PLANTS

NO.	ID NO.	NAME OF PLANTS	DEVEL. GRADE	PLANT TYPE	COMIS. YEAR	UNIT CAPACITY (KW)	NO.OF UNIT	PLANT FACTOR	REMARK :
1	1- 1- 2- 1-2	ISABELA 3	2	4	1994	100000.	1	0.700	LUZON GRID
2	1- 1- 2- 1-1	ISABELA 1-2	2	4	1993	100000.	2	0.700	LUZON GRID
3	1- 1- 3- 1-2	BATAAN 2	0	5	1977	150000.	1	0.470	LUZON GRID
4	1- 1- 3- 1-1	BATAAN 1	0	5	1972	75000.	1	0.470	LUZON GRID
5	1- 1- 4- 1-1	MANILA 1	0	5	1965	100000.	1	0.470	LUZON GRID
6	1- 1- 4- 1-2	MANILA 2	0	5	1966	100000.	1	0.470	LUZON GRID
7	1- 1- 4- 2-1	SUCAT 1	0	5	1968	150000.	1	0.470	LUZON GRID
8	1- 1- 4- 2-2	SUCAT 2	0	5	1970	200000.	1	0.470	LUZON GRID
9	1- 1- 4- 2-3	SUCAT 3	0	5	1971	200000.	1	0.470	LUZON GRID
10	1- 1- 4- 2-4	SUCAT 4	0	5	1972	300000.	1	0.470	LUZON GRID
11	1- 1- 4- 3-1	MALAYA 1	0	5	1974	300000.	1	0.470	LUZON GRID
12	1- 1- 4- 3-2	MALAYA 2	0	5	1979	350000.	1	0.470	LUZON GRID
13	1- 1- 4- 4-2	MAK-BAN 3-4	0	2	1980	55000.	2	0.730	LUZON GRID
14	1- 1- 4- 4-1	MAK-BAN 1-2	0	2	1979	55000.	2	0.730	LUZON GRID
15	1- 1- 4- 4-3	MAK-BAN 5-6	0	2	1984	55000.	2	0.730	LUZON GRID
16	1- 1- 4- 5-2	CALACA 2	2	4	1992	300000.	1	0.700	LUZON GRID
17	1- 1- 4- 5-1	CALACA 1	0	4	1984	300000.	1	0.700	LUZON GRID
18	1- 1- 4- 6-1	BACON MANITO	2	2	1991	55000.	2	0.730	LUZON GRID
19	1- 1- 5- 1-1	TIWI	0	2	1979	55000.	6	0.730	LUZON GRID
20	1- 1-88-88-1	GEO-THERMAL 1	9	2	1996	55000.	6	0.730	LUZON GRID
21	1- 1-88-88-2	GEO-THERMAL 2	9	2	1998	55000.	6	0.730	LUZON GRID
22	1- 1-88-88-3	GEO-THERMAL 3	9	2	2001	55000.	6	0.730	LUZON GRID
23	1- 1-88-88-4	GEO-THERMAL 4	9	2	2002	55000.	6	0.730	LUZON GRID
24	1- 1-89-99-1	COAL THERMAL 1	9	4	2000	300000.	1	0.700	LUZON GRID
25	1- 1-89-99-2	COAL THERMAL 2	9	4	2004	600000.	1	0.700	LUZON GRID

NOTES:

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

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

RESULTS OF PRIORITY RANKING STUDY

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

LIST OF CANDIDATE PROJECTS

SER. NO.	PLANT NO.	PROJECT I D	TYPE	NAME OF PROJECT	INSTALLED CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST CAPITAL (MIL US$)	COST OPERATION (MIL US$)	STAGE DEVELOP. INDEX 1/	PRE-CEDING PLANT 2/	PRE-CONSTRUCTION LEAD TIME (YEARS)	CONSTRUCTION PERIOD (YEARS)
1	1	1- 1- 1	6	SAN ROQUE	390.0	0.32	409.2	6.1	0	0	4	5
2	2	1- 1- 1	6	DIDUYON	352.0	0.29	469.2	7.0	0	0	4	5
3	3	1- 1- 1	6	MATUNO	180.0	0.30	267.0	4.0	0	0	4	5
4	4	1- 1- 1	6	BINONGAN	175.0	0.41	269.2	4.0	0	0	4	5
5	5	1- 1- 1	6	CHICO-4	360.0	0.23	534.9	8.0	0	0	2	5
6	6	1- 1- 1	6	GENED	600.0	0.24	801.5	12.0	0	0	4	5
7	7	1- 1- 1	6	AGOS	140.0	0.44	351.4	5.4	0	0	4	5
8	8	1- 1- 1	6	BALOG-BALOG	33.0	0.27	39.9	0.6	0	0	4	4
9	9	1- 1- 1	6	PALSIGUAN	42.0	0.50	173.1	2.6	0	0	4	5
10	10	1- 1- 1	6	SUPO	141.8	0.32	258.0	3.9	0	0	6	5
11	10	1- 1- 1	6	ETEB	107.2	0.30	225.8	3.4	0	0	6	5
12	6	1- 1- 1	6	SISIRITAN	417.6	0.26	610.5	9.2	0	0	6	5
13	11	1- 1- 1	6	AGBULU	216.2	0.31	403.0	6.0	0	0	6	5
14	12	1- 1- 1	6	SADANGA ALT	299.4	0.28	600.1	9.0	0	0	6	5
15	13	1- 1- 1	6	TABU	138.6	0.31	312.2	4.7	0	0	6	5
16	14	1- 1- 1	6	UP.AGOS-2	135.4	0.36	285.2	4.3	0	0	6	5
17	15	1- 1- 1	6	WAWA	61.0	0.37	175.2	2.6	0	0	6	5
18	16	1- 1- 2	1	NAGUILIAN	36.9	0.35	48.5	0.7	0	0	6	4
19	17	1- 1- 2	1	LUYA	40.8	0.35	60.3	0.9	0	0	6	4
20	18	1- 1- 2	1	BAKUM	33.0	0.35	35.4	0.5	0	0	6	4
21	19	1- 1- 2	1	AMBURAYAN	64.0	0.34	75.4	1.1	0	0	6	4
22	20	1- 1- 2	1	ABRA	10.9	0.41	21.5	0.3	0	0	6	4
23	21	1- 1- 2	1	APAYAO	15.8	0.46	39.4	0.6	0	0	6	4
24	22	1- 1- 2	1	CHICO-1R	27.3	0.46	40.7	0.6	0	0	6	4
25	12	1- 1- 2	1	CHICO-2R	34.5	0.46	43.3	0.6	0	0	6	4
26	23	1- 1- 2	1	SALTAN	12.6	0.46	25.2	0.4	0	0	6	4
27	24	1- 1- 2	1	PASIL	20.2	0.46	30.0	0.4	0	0	6	4
28	25	1- 1- 2	1	TANUDAN	24.8	0.46	34.0	0.5	0	0	6	4
29	26	1- 1- 2	1	IBULAO	16.5	0.44	29.3	0.4	0	0	6	4
30	27	1- 1- 2	1	CASECNAN	11.5	0.46	28.1	0.4	0	0	6	4
31	28	1- 1- 2	1	UP.CASECNAN	12.4	0.46	31.6	0.5	0	0	6	4
32	29	1- 1- 2	1	AGNO-2	10.9	0.47	24.5	0.4	0	0	6	4
33	30	1- 1- 2	1	AGNO-3	9.5	0.48	21.9	0.3	0	0	6	4

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* SUMMARY OF PRIORITY RANKING *
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LIST OF SCREENED PROJECTS

NO	NAME	TYPE	INST. YEAR	CONNE. YEAR	CAPACITY (MW)	ASSUMED MAXIMUM P.F.	COST		PRESENT WORTH (MIL US$)
							CAPITAL (MIL US$)	OPERATION (MIL US$)	
STUDY AREA : 1- 1 LUZON GRID									
01	GEO-THERMAL 1	2	1996	-	330.0	0.73	495.0	16.5	203.0
02	GEO-THERMAL 2	2	1998	-	330.0	0.73	495.0	16.5	161.8
03	AMBURAYAN	1	1999	-	64.0	0.34	75.4	1.1	19.1
04	COAL THERMAL 1	4	2000	-	300.0	0.70	360.0	42.1	133.4
05	GEO-THERMAL 3	2	2001	-	330.0	0.73	495.0	16.5	115.2
06	CHICO-2R	1	2001	-	34.5	0.46	43.3	0.6	8.7
07	GEO-THERMAL 4	2	2002	-	330.0	0.73	495.0	16.5	102.8
08	PALSIGUAN	6	2002	-	42.0	0.50	173.1	2.6	33.4
09	SAN ROQUE	6	2003	-	390.0	0.32	409.2	6.1	70.5
10	COAL THERMAL 2	4	2004	-	600.0	0.70	720.0	84.3	169.6

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