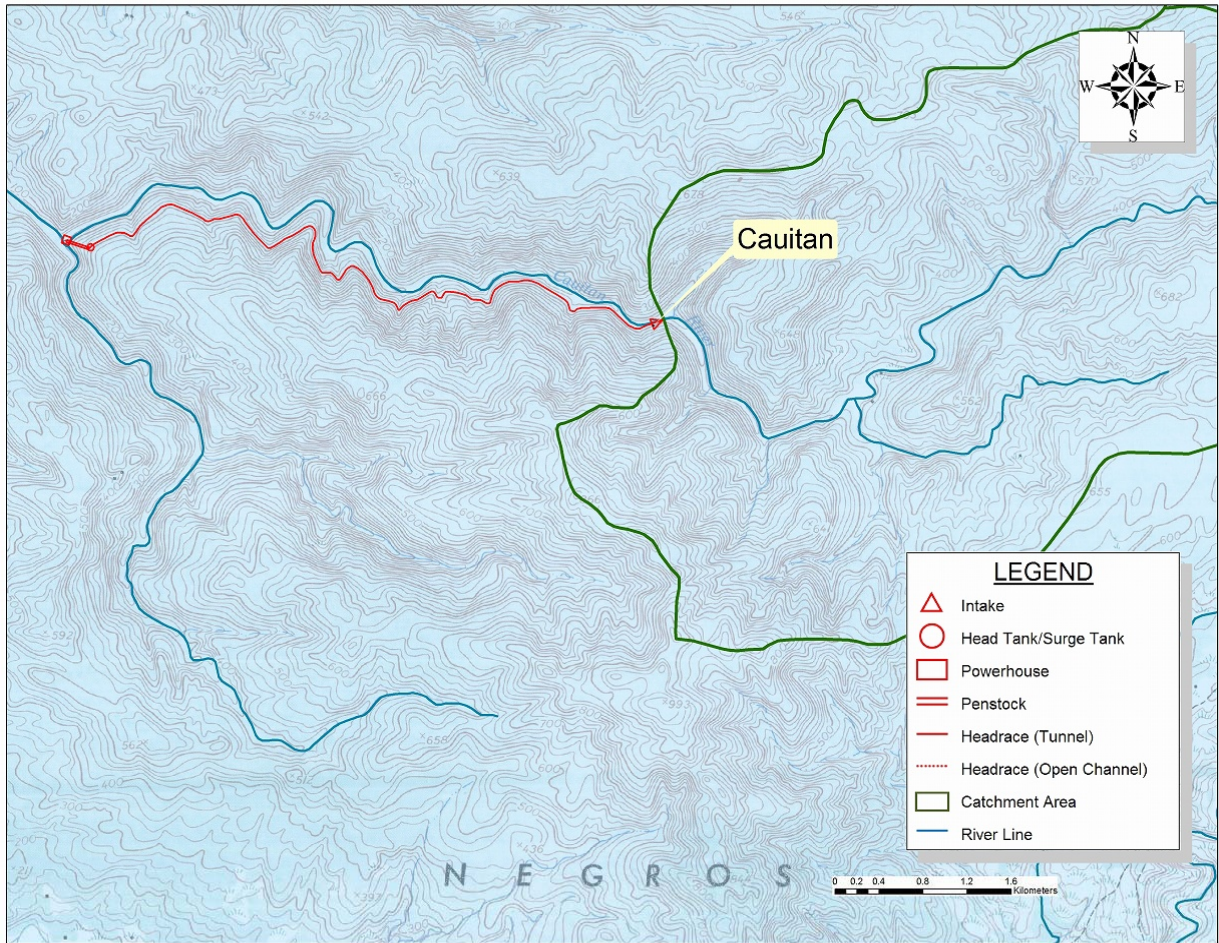


JICA POTENTIAL SITE WITH SITE RECONNAISSANCE (19 / 47)

PROJECT NAME Cautitan



LOCATION

Island	Negros
Region	CENTRAL VISAYAS
Province	NEGROS ORIENTAL
Municipality	SANTA CATALINA

RIVER

River Basin	Cautitan
River	Cautitan

RESERVOIR

Reservoir Volume	-	Mil m ³
Effective Volume	-	Mil m ³
High Water Level	-	m

Coordinate

	Latitude	Longitude
Weir/Dam	9°18'6"	122°59'14"
Intake1	-	-
Intake2	-	-
Powerhouse	9°18'30"	122°56'22"

Remark

--

POWER GENERATION PLAN

Max Output	3.30 MW
Power Generation Type	Run of River
Annual Power Generation	25.109 GWh
Plant Factor	83%
Catchment Area	48.67 km ²
Maximum Discharge	3.52 m ³ /s
Gross Head	130.00 m
Effective Head	117.77 m
Intake Water Level	226.00 m
Tailrace Water level	96.00 m

PROJECT EVALUATION

Construction Cost	21.53 Mil USD 929.96 Mil PHP
Unit Cost / kW	4,532 USD 195,780 PHP
Unit Cost / kWh	0.55 USD 23.94 PHP
EIRR	17.4%
FIRR	12.1%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	5.0 m
	Crest Length	17.0 m
Headrace	Open Channel	5,774.0 m
	Tunnel	- m
Penstock		260.0 m
Tailrace		30.0 m
Access Road		6.8 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	one unit
Transmission	Line Voltage	- kV
	Length	7.8 km

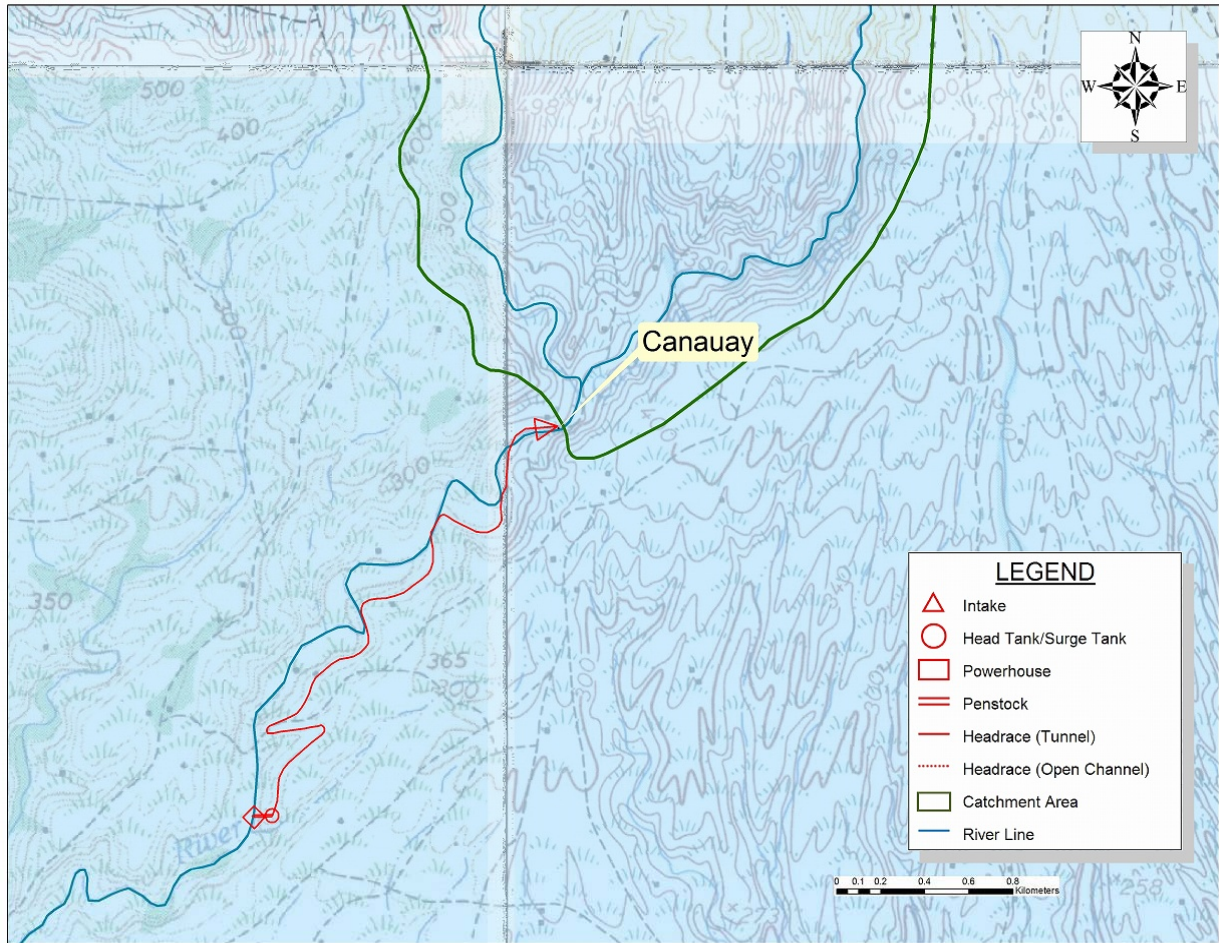
ENVIRONMENT ISSUE

Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

PROJECT NAME **Canauay**



LOCATION

Island	Negros
Region	CENTRAL VISAYAS
Province	NEGROS ORIENTAL
Municipality	ZAMBOANGUITA

RIVER

River Basin	Canauay
River	Canauay

RESERVOIR

Reservoir Volume	-	Mil m ³
Effective Volume	-	Mil m ³
High Water Level	-	m

Coordinate

	Latitude	Longitude
Weir/Dam	9°3'	123°7'13"
Intake1	-	-
Intake2	-	-
Powerhouse	9°8'7"	123°6'29"

Remark

--

POWER GENERATION PLAN

Max Output	1.40 MW
Power Generation Type	Run of River
Annual Power Generation	10.328 GWh
Plant Factor	80%
Catchment Area	33.14 km ²
Maximum Discharge	2.39 m ³ /s
Gross Head	81.00 m
Effective Head	72.46 m
Intake Water Level	268.00 m
Tailrace Water level	187.00 m

PROJECT EVALUATION

Construction Cost	10.75 Mil USD 464.61 Mil PHP
Unit Cost / kW	5,148 USD 222,392 PHP
Unit Cost / kWh	0.65 USD 27.87 PHP
EIRR	13.9%
FIRR	9.5%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	3.0 m
	Crest Length	45.0 m
Headrace	Open Channel	2,600.0 m
	Tunnel	- m
Penstock		130.0 m
Tailrace		10.0 m
Access Road		1.3 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	one unit
Transmission	Line Voltage	- kV
	Length	1.5 km

ENVIRONMENT ISSUE

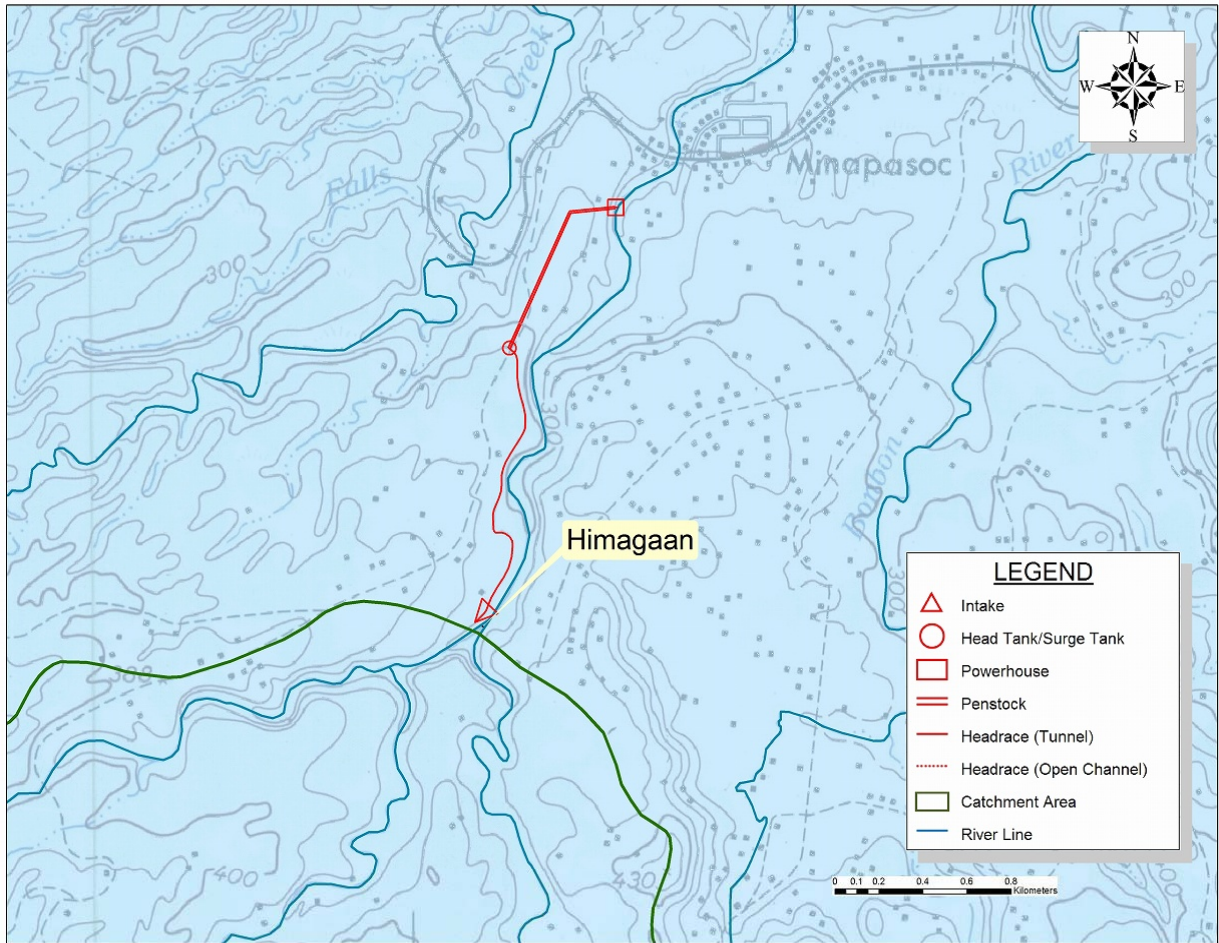
Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

JICA POTENTIAL SITE WITH SITE RECONNAISSANCE (21 / 47)

PROJECT NAME Himagaan



LOCATION

Island	Negros
Region	WESTERN VISAYAS
Province	NEGROS OCCIDENTAL
Municipality	CALATRAVA

RIVER

River Basin	Himogaan
River	Himogaan

RESERVOIR

Reservoir Volume	-	Mil m ³
Effective Volume	-	Mil m ³
High Water Level	-	m

Coordinate

	Latitude	Longitude
Weir/Dam	10°40'43"	123°20'15"
Intake1	-	-
Intake2	-	-
Powerhouse	10°41'42"	123°20'34"

Remark

--

POWER GENERATION PLAN

Max Output	0.19 MW
Power Generation Type	Run of River
Annual Power Generation	1.161 GWh
Plant Factor	66%
Catchment Area	64.50 km ²
Maximum Discharge	4.10 m ³ /s
Gross Head	15.00 m
Effective Head	6.29 m
Intake Water Level	290.00 m
Tailrace Water level	275.00 m

PROJECT EVALUATION

Construction Cost	10.54 Mil USD 455.20 Mil PHP
Unit Cost / kW	60,498 USD 2,613,534 PHP
Unit Cost / kWh	9.02 USD 389.69 PHP
EIRR	-
FIRR	-

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	3.0 m
	Crest Length	60.0 m
Headrace	Open Channel	1,250.0 m
	Tunnel	- m
Penstock		840.0 m
Tailrace		10.0 m
Access Road		0.6 km

EM / TL WORKS

Turbine	Type	Cross Flow
	Number of Unit	one unit
Transmission	Line Voltage	- kV
	Length	13.4 km

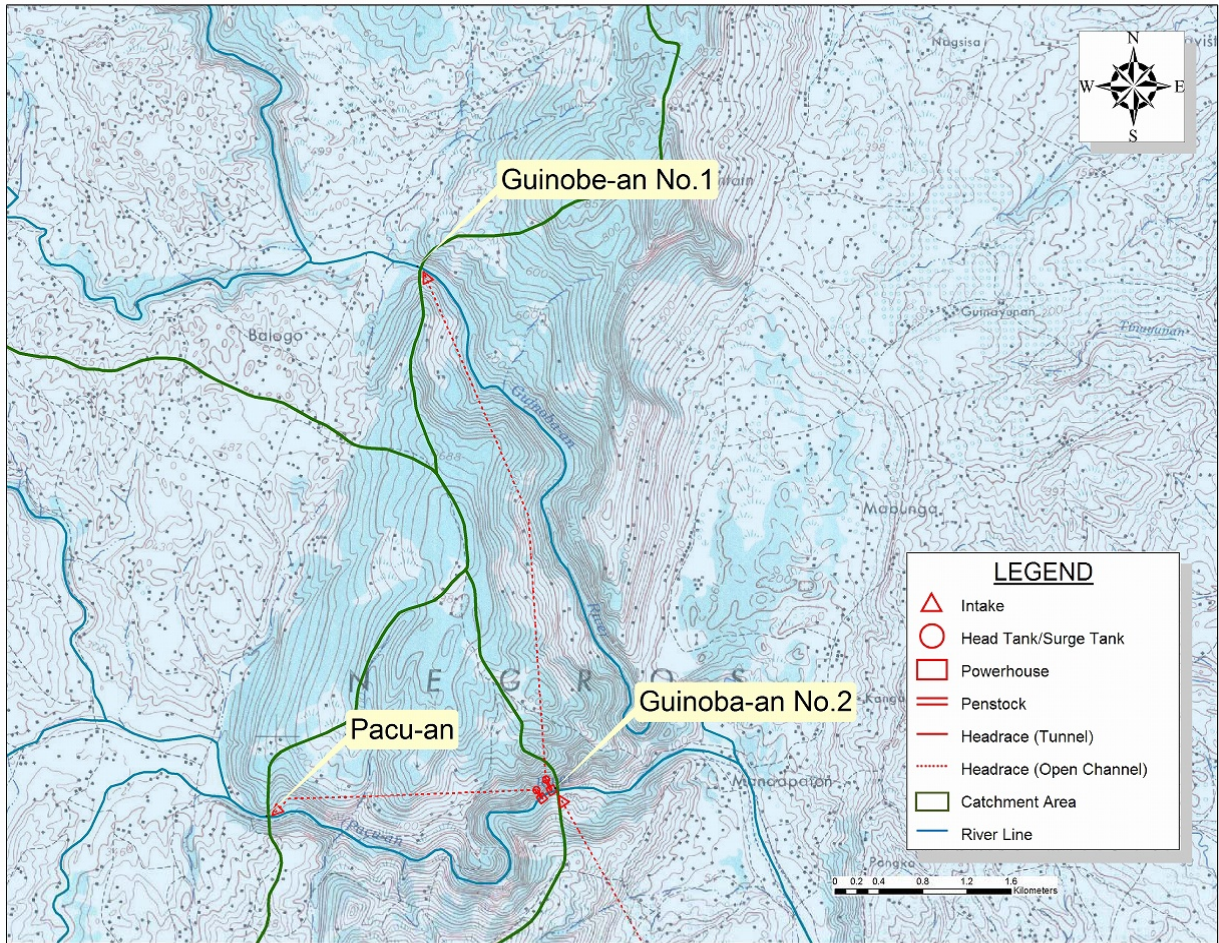
ENVIRONMENT ISSUE

Protected Area	Northern Negros Natural Park
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

PROJECT NAME Guinobe-an No.1



LOCATION

Island	Negros
Region	CENTRAL VISAYAS
Province	NEGROS ORIENTAL
Municipality	GUIHULNGAN

RIVER

River Basin	Libertad
River	Guinobe-an

RESERVOIR

Reservoir Volume	-	Mil m ³
Effective Volume	-	Mil m ³
High Water Level	-	m

Coordinate

	Latitude	Longitude
Weir/Dam	10°7'13"	123°10'47"
Intake1	-	-
Intake2	-	-
Powerhouse	10°4'42"	123°11'27"

Remark

--

POWER GENERATION PLAN

Max Output	6.70 MW
Power Generation Type	Run of River
Annual Power Generation	37.580 GWh
Plant Factor	61%
Catchment Area	71.27 km ²
Maximum Discharge	4.27 m ³ /s
Gross Head	204.00 m
Effective Head	192.29 m
Intake Water Level	321.00 m
Tailrace Water level	117.00 m

PROJECT EVALUATION

Construction Cost	24.40 Mil USD 1,054.25 Mil PHP
Unit Cost / kW	3,223 USD 139,218 PHP
Unit Cost / kWh	0.53 USD 22.87 PHP
EIRR	20.0%
FIRR	12.7%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	3.5 m
	Crest Length	10.0 m
Headrace	Open Channel	- m
	Tunnel	4,800.0 m
Penstock		330.0 m
Tailrace		10.0 m
Access Road		4.3 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	two unit
Transmission	Line Voltage	- kV
	Length	2.7 km

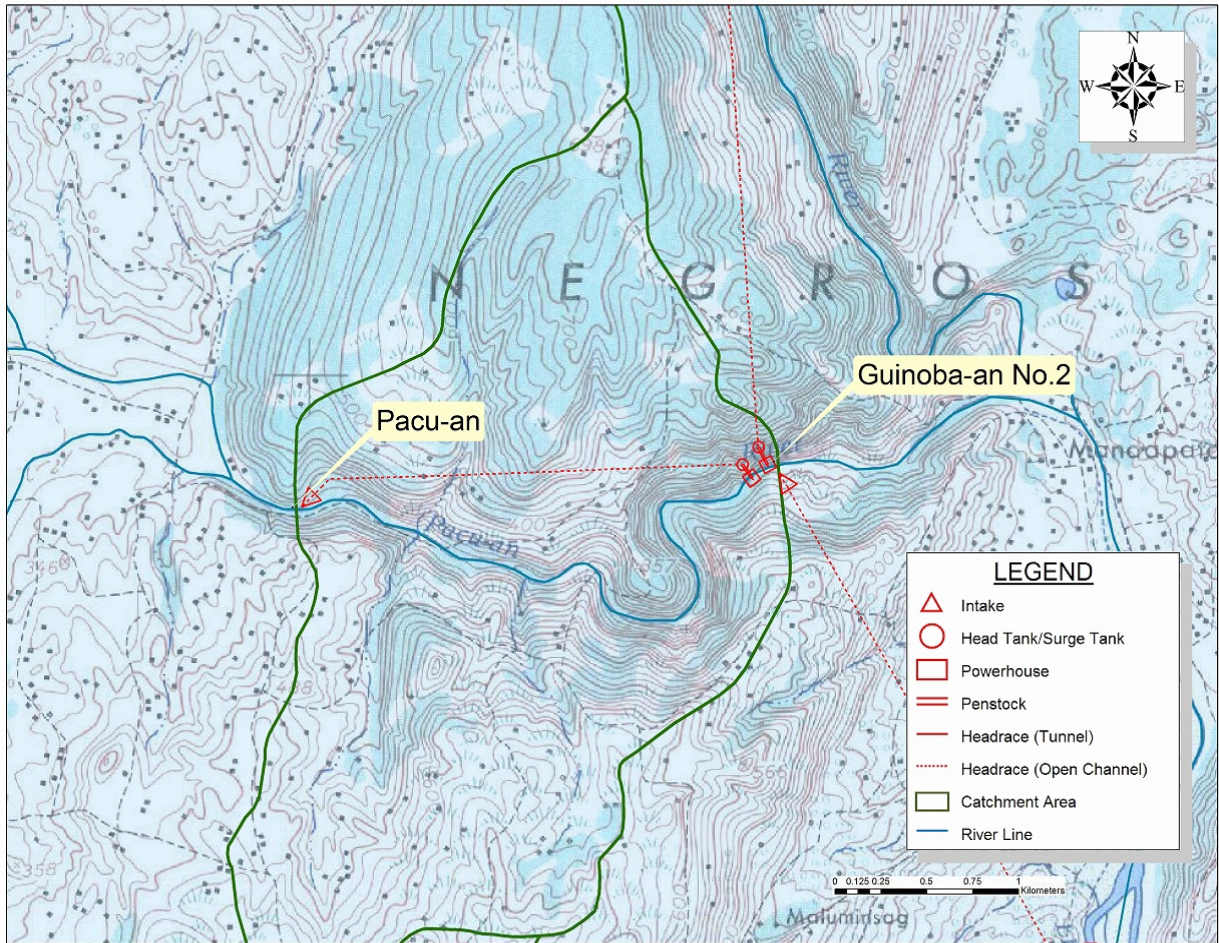
ENVIRONMENT ISSUE

Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

PROJECT NAME Pacu-an



LOCATION

Island	Negros
Region	CENTRAL VISAYAS
Province	NEGROS ORIENTAL
Municipality	LA LIBERTAD

RIVER

River Basin	Libertad
River	Pacu-an

RESERVOIR

Reservoir Volume	-	Mil m ³
Effective Volume	-	Mil m ³
High Water Level	-	m

Coordinate

	Latitude	Longitude
Weir/Dam	10°4'33"	123°10'2"
Intake1	-	-
Intake2	-	-
Powerhouse	10°4'41"	123°11'24"

Remark

--

POWER GENERATION PLAN

Max Output	8.30 MW
Power Generation Type	Run of River
Annual Power Generation	41.575 GWh
Plant Factor	54%
Catchment Area	103.23 km ²
Maximum Discharge	7.62 m ³ /s
Gross Head	141.00 m
Effective Head	131.83 m
Intake Water Level	266.00 m
Tailrace Water level	125.00 m

PROJECT EVALUATION

Construction Cost	22.39 Mil USD 967.15 Mil PHP
Unit Cost / kW	2,684 USD 115,968 PHP
Unit Cost / kWh	0.49 USD 21.36 PHP
EIRR	23.0%
FIRR	15.7%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	4.0 m
	Crest Length	45.0 m
Headrace	Open Channel	- m
	Tunnel	2,600.0 m
Penstock		270.0 m
Tailrace		10.0 m
Access Road		4.7 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	two unit
Transmission	Line Voltage	- kV
	Length	2.7 km

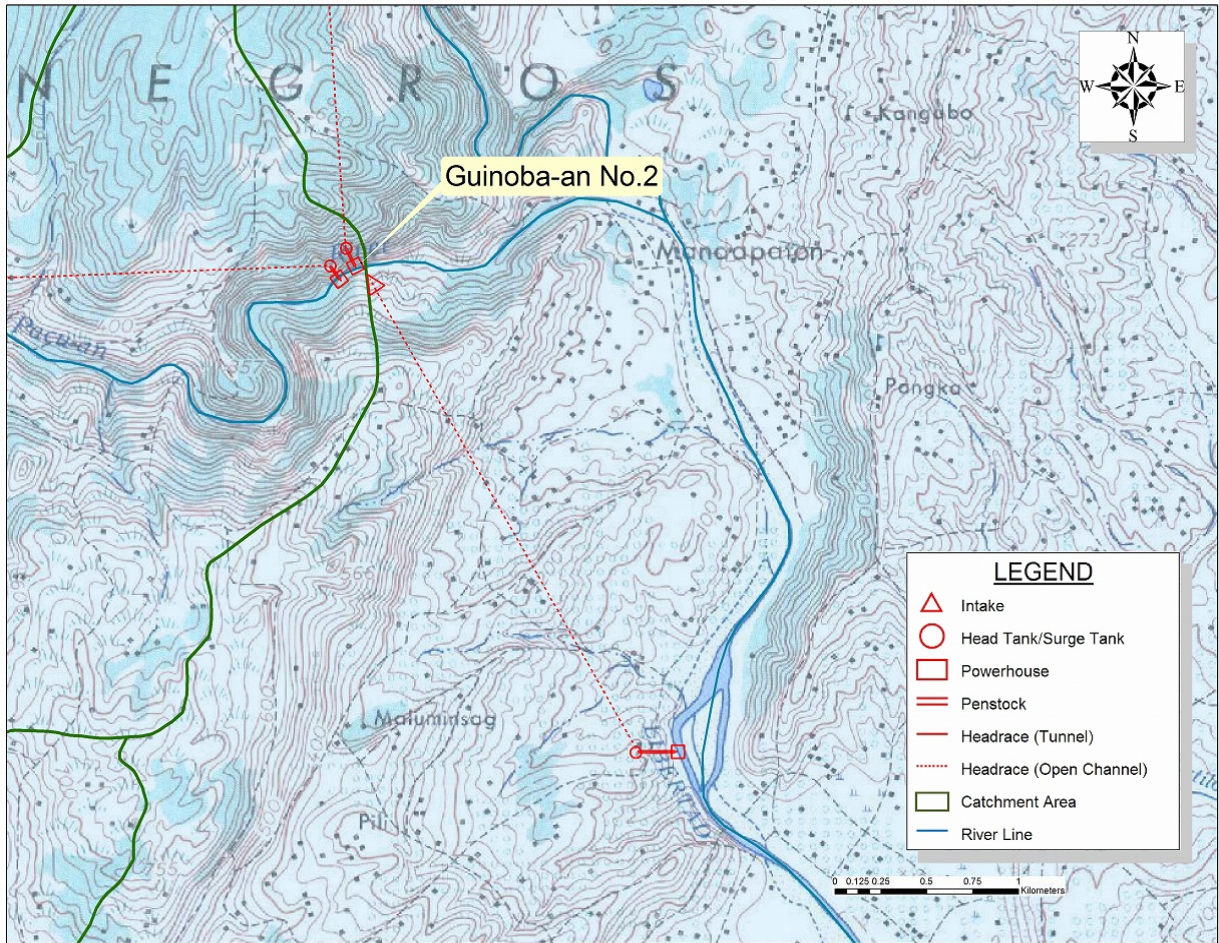
ENVIRONMENT ISSUE

Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

PROJECT NAME **Guinoba-an No.2**



LOCATION

Island	Negros
Region	CENTRAL VISAYAS
Province	NEGROS ORIENTAL
Municipality	LA LIBERTAD

RIVER

River Basin	Libertad
River	Guinoba-an

RESERVOIR

Reservoir Volume	-	Mil m ³
Effective Volume	-	Mil m ³
High Water Level	-	m

Coordinate

	Latitude	Longitude
Weir/Dam	10°4'41"	123°11'28"
Intake1	-	-
Intake2	-	-
Powerhouse	10°3'16"	123°12'22"

Remark

--

POWER GENERATION PLAN

Max Output	2.90 MW
Power Generation Type	Run of River
Annual Power Generation	21,969 GWh
Plant Factor	82%
Catchment Area	183.13 km ²
Maximum Discharge	6.71 m ³ /s
Gross Head	63.00 m
Effective Head	54.20 m
Intake Water Level	117.00 m
Tailrace Water level	54.00 m

PROJECT EVALUATION

Construction Cost	26.54 Mil USD 1,146.31 Mil PHP
Unit Cost / kW	5,872 USD 253,683 PHP
Unit Cost / kWh	0.71 USD 30.83 PHP
EIRR	11.8%
FIRR	7.9%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	4.0 m
	Crest Length	35.0 m
Headrace	Open Channel	- m
	Tunnel	2,923.0 m
Penstock		100.0 m
Tailrace		10.0 m
Access Road		3.6 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	one unit
Transmission	Line Voltage	- kV
	Length	0.1 km

ENVIRONMENT ISSUE

Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA