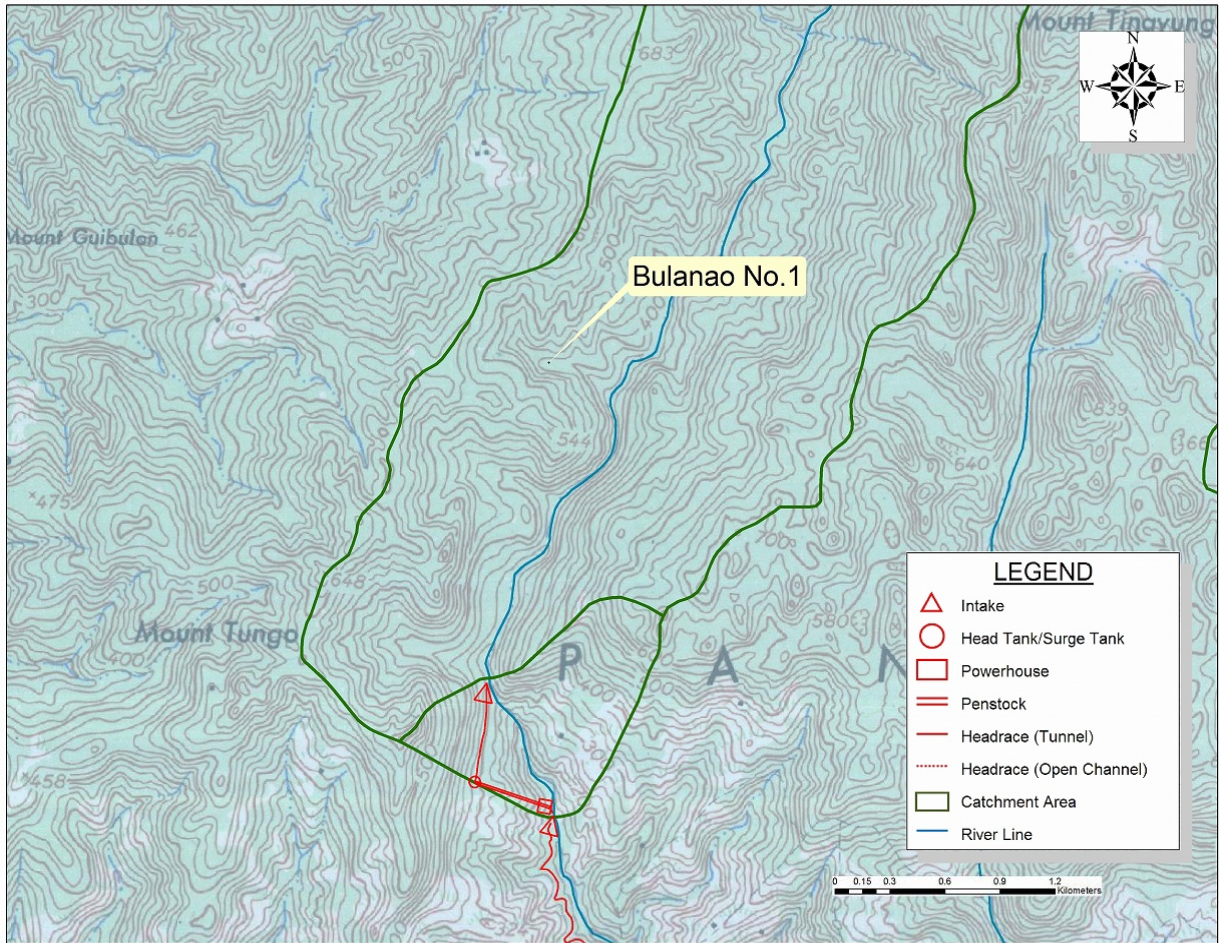


PROJECT NAME Bulanao No.1



LOCATION

Island	Panay
Region	WESTERN VISAYAS
Province	ANTIQUE
Municipality	LIBERTAD

RIVER

River Basin	Bulanao
River	Bulanao

RESERVOIR

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

Coordinate

	Latitude	Longitude
Weir/Dam	11°48'38"	121°58'11"
Intake1	-	-
Intake2	-	-
Powerhouse	11°48'18"	121°58'16"

Remark

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POWER GENERATION PLAN

Max Output	3.30 MW
Power Generation Type	Run of River
Annual Power Generation	10.223 GWh
Plant Factor	34%
Catchment Area	11.30 km ²
Maximum Discharge	2.87 m ³ /s
Gross Head	147.00 m
Effective Head	139.81 m
Intake Water Level	269.00 m
Tailrace Water level	122.00 m

PROJECT EVALUATION

Construction Cost	8.39 Mil USD 362.45 Mil PHP
Unit Cost / kW	2,926 USD 126,397 PHP
Unit Cost / kWh	0.88 USD 38.01 PHP
EIRR	11.2%
FIRR	5.9%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	7.0 m
	Crest Length	28.0 m
Headrace	Open Channel	600.0 m
	Tunnel	- m
Penstock		420.0 m
Tailrace		30.0 m
Access Road		3.4 km

EM / TL WORKS

Turbine	Type	Cross Flow
	Number of Unit	two unit
Transmission	Line Voltage	- kV
	Length	12.8 km

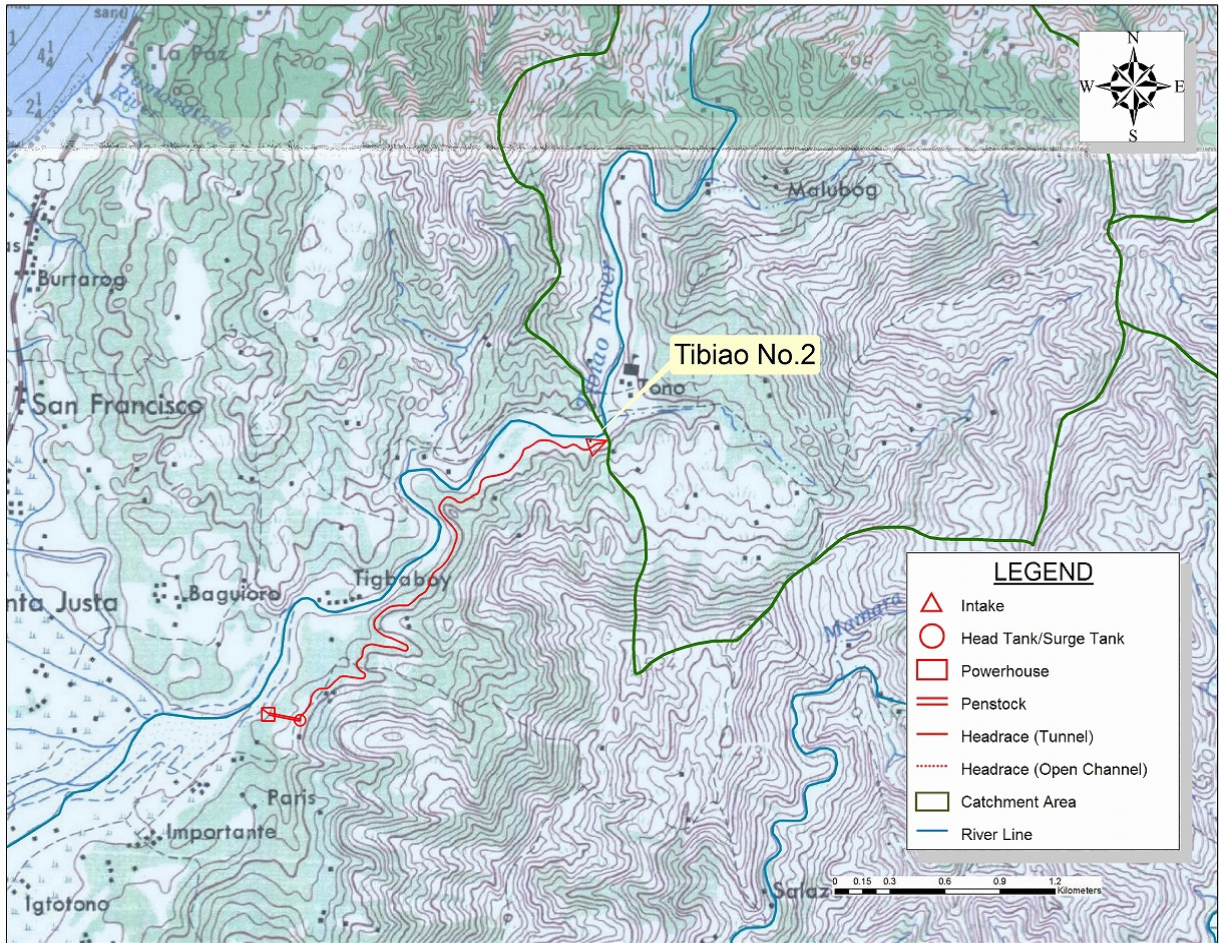
ENVIRONMENT ISSUE

Protected Area	Northwest Panay Peninsula Natural Park
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

PROJECT NAME Tibiao No.2



LOCATION

Island	Panay
Region	WESTERN VISAYAS
Province	ANTIQUE
Municipality	TIBIAO

RIVER

River Basin	Tibiao
River	Tibiao

RESERVOIR

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

Coordinate

	Latitude	Longitude
Weir/Dam	11°19'4.5"	122°4'43.36"
Intake1	-	-
Intake2	-	-
Powerhouse	11°18'15.12"	122°3'43.46"

Remark

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POWER GENERATION PLAN

Max Output	1.50 MW
Power Generation Type	Run of River
Annual Power Generation	7.449 GWh
Plant Factor	54%
Catchment Area	49.26 km ²
Maximum Discharge	5.86 m ³ /s
Gross Head	41.00 m
Effective Head	32.27 m
Intake Water Level	85.00 m
Tailrace Water level	44.00 m

PROJECT EVALUATION

Construction Cost	11.98 Mil USD 517.68 Mil PHP
Unit Cost / kW	7,956 USD 343,686 PHP
Unit Cost / kWh	1.47 USD 63.34 PHP
EIRR	1.6%
FIRR	-1.1%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	10.0 m
	Crest Length	65.0 m
Headrace	Open Channel	2,650.0 m
	Tunnel	- m
Penstock		160.0 m
Tailrace		50.0 m
Access Road		0.5 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	two unit
Transmission	Line Voltage	- kV
	Length	2.9 km

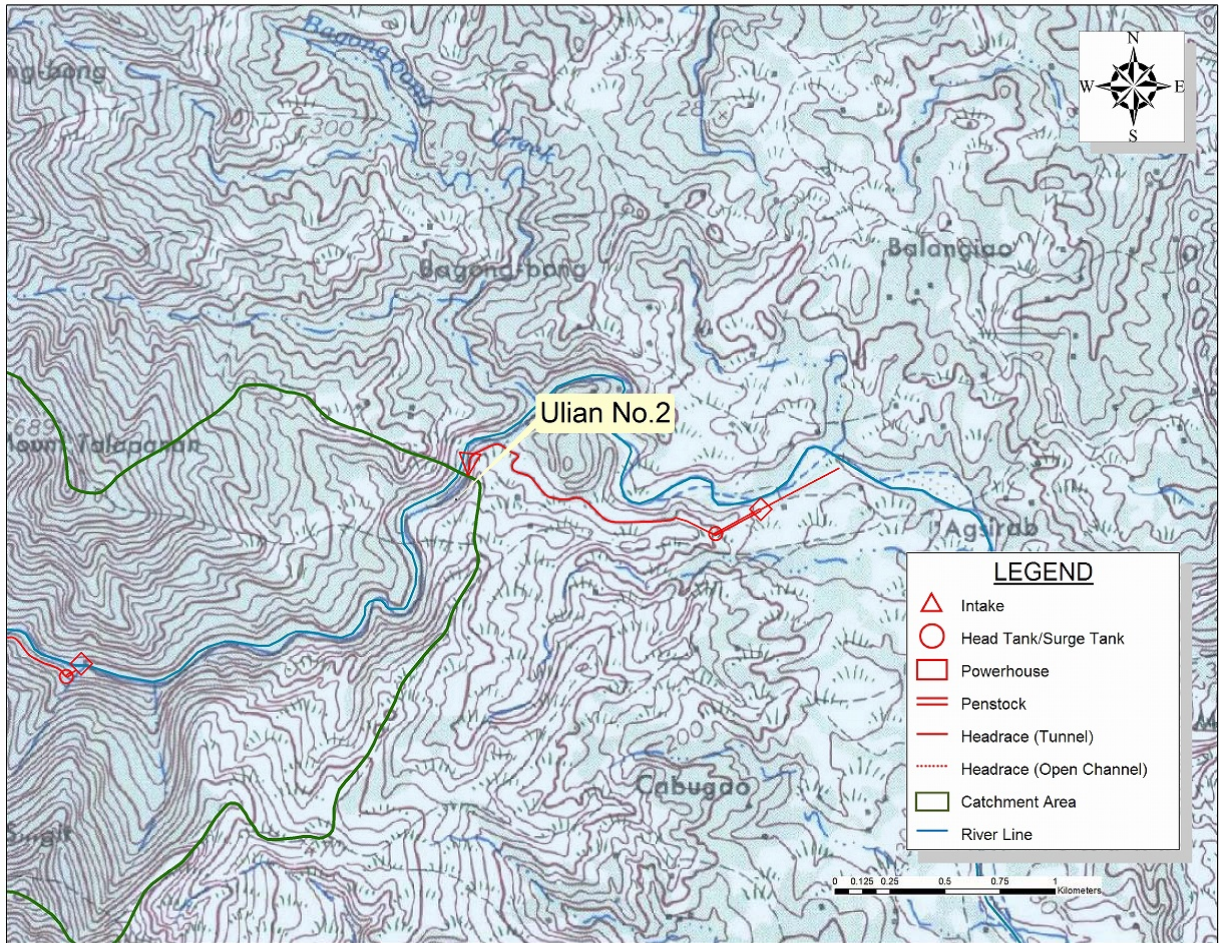
ENVIRONMENT ISSUE

Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

PROJECT NAME Ulian No.2



LOCATION

Island	Panay
Region	WESTERN VISAYAS
Province	ILOILO
Municipality	LAMBUNAO

RIVER

River Basin	Jalaud
River	Tagbacan

RESERVOIR

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

Coordinate

	Latitude	Longitude
Weir/Dam	11°4'30.76"	122°23'40.6"
Intake1	-	-
Intake2	-	-
Powerhouse	11°4'27.79"	122°24'28.88"

Remark

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POWER GENERATION PLAN

Max Output	1.00 MW
Power Generation Type	Run of River
Annual Power Generation	7.665 GWh
Plant Factor	83%
Catchment Area	59.21 km ²
Maximum Discharge	3.78 m ³ /s
Gross Head	42.00 m
Effective Head	33.83 m
Intake Water Level	193.00 m
Tailrace Water level	151.00 m

PROJECT EVALUATION

Construction Cost	12.51 Mil USD 540.53 Mil PHP
Unit Cost / kW	8,377 USD 361,881 PHP
Unit Cost / kWh	1.00 USD 43.36 PHP
EIRR	6.2%
FIRR	3.4%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	7.0 m
	Crest Length	10.0 m
Headrace	Open Channel	1,500.0 m
	Tunnel	- m
Penstock		240.0 m
Tailrace		400.0 m
Access Road		0.7 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	one unit
Transmission	Line Voltage	- kV
	Length	13.3 km

ENVIRONMENT ISSUE

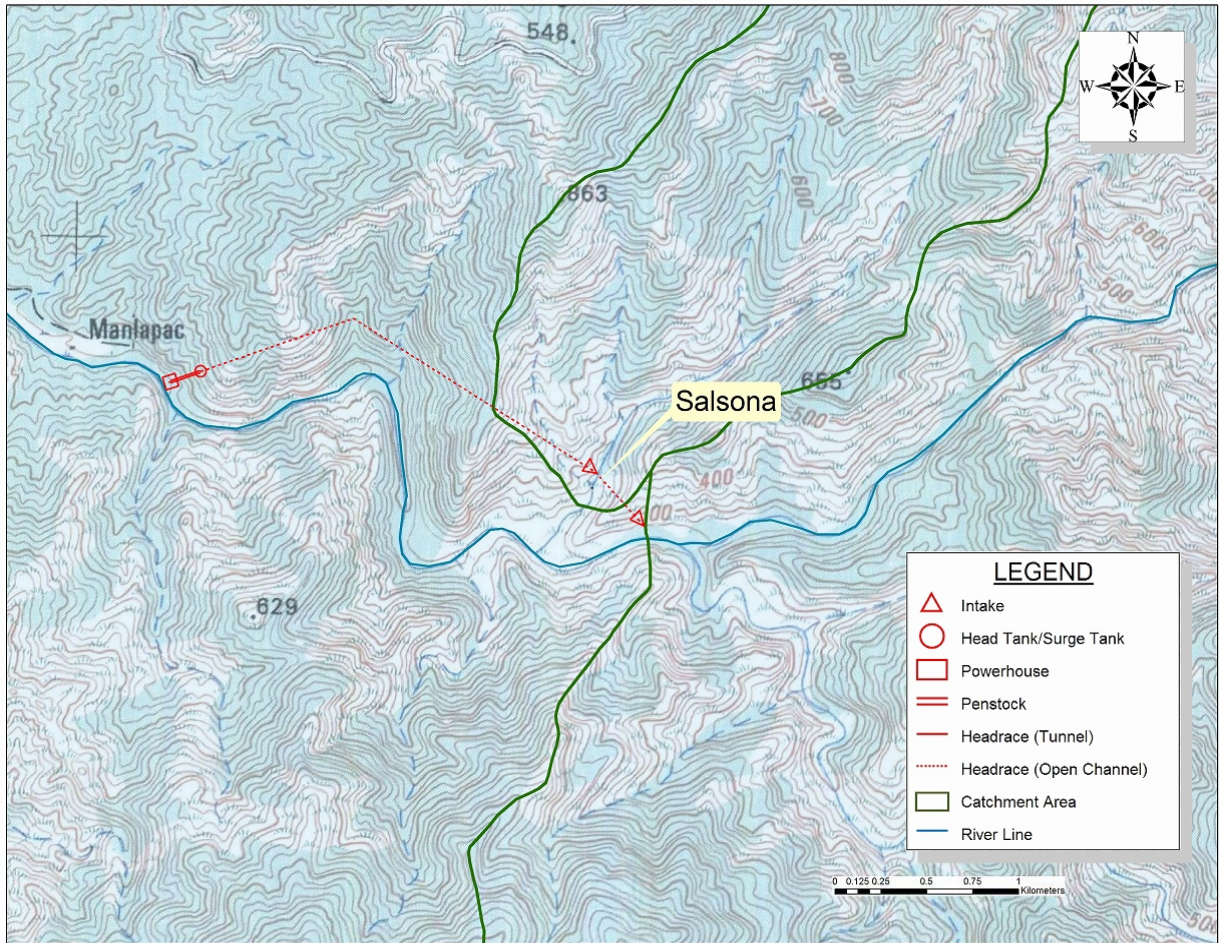
Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

JICA POTENTIAL SITE WITH SITE RECONNAISSANCE (34 / 47)

PROJECT NAME Salsona



LOCATION

Island	Luzon
Region	ILOCOS REGION
Province	ILOCOS NORTE
Municipality	NUEVA ERA

RIVER

River Basin	Laoag
River	Salsona

RESERVOIR

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

Coordinate

	Latitude	Longitude
Weir/Dam	18°4'11"	120°51'41"
Intake1	18°4'3"	120°51'53"
Intake2	-	-
Powerhouse	18°4'25"	120°50'21"

Remark

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POWER GENERATION PLAN

Max Output	5.90 MW
Power Generation Type	Run of River
Annual Power Generation	17.991 GWh
Plant Factor	33%
Catchment Area	61.29 km ²
Maximum Discharge	7.75 m ³ /s
Gross Head	103.00 m
Effective Head	93.33 m
Intake Water Level	270.00 m
Tailrace Water level	167.00 m

PROJECT EVALUATION

Construction Cost	19.88 Mil USD 858.95 Mil PHP
Unit Cost / kW	3,353 USD 144,857 PHP
Unit Cost / kWh	1.01 USD 43.52 PHP
EIRR	8.4%
FIRR	3.3%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	10.0 m
	Crest Length	27.0 m
Headrace	Open Channel	4,300.0 m
	Tunnel	- m
Penstock		190.0 m
Tailrace		10.0 m
Access Road		0.7 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	two unit
Transmission	Line Voltage	- kV
	Length	2.4 km

ENVIRONMENT ISSUE

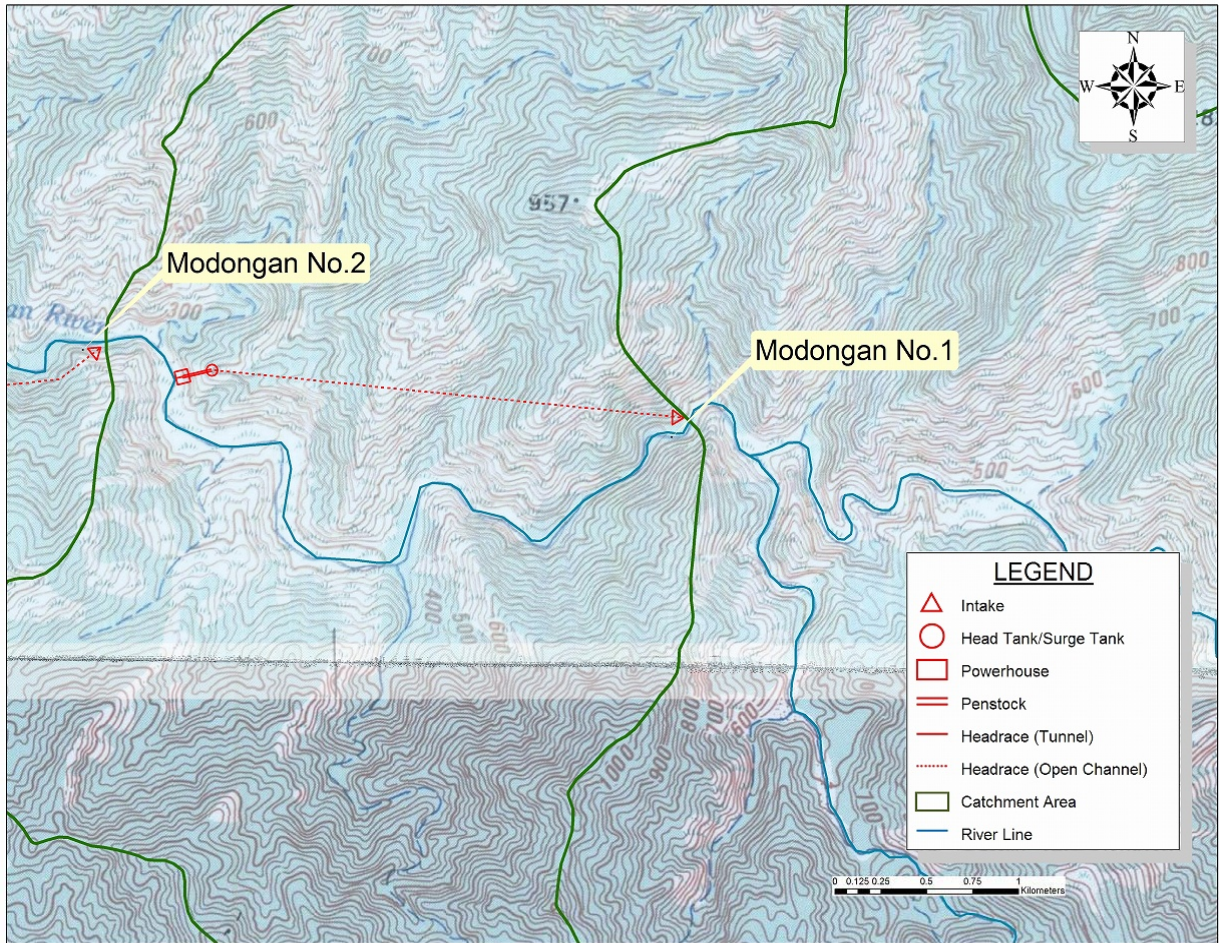
Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA

JICA POTENTIAL SITE WITH SITE RECONNAISSANCE (35 / 47)

PROJECT NAME Modongan No.1



LOCATION

Island	Luzon
Region	ILOCOS REGION
Province	ILOCOS NORTE
Municipality	NUEVA ERA

RIVER

River Basin	Laoag
River	Salsona

RESERVOIR

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

Coordinate

	Latitude	Longitude
Weir/Dam	18°0'34"	120°51'7"
Intake1	-	-
Intake2	-	-
Powerhouse	18°0'42"	120°49'34"

Remark

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POWER GENERATION PLAN

Max Output	11.00 MW
Power Generation Type	Run of River
Annual Power Generation	28.647 GWh
Plant Factor	28%
Catchment Area	71.94 km ²
Maximum Discharge	12.41 m ³ /s
Gross Head	118.00 m
Effective Head	107.74 m
Intake Water Level	385.00 m
Tailrace Water level	267.00 m

PROJECT EVALUATION

Construction Cost	23.57 Mil USD 1,018.19 Mil PHP
Unit Cost / kW	2,441 USD 105,469 PHP
Unit Cost / kWh	0.87 USD 37.45 PHP
EIRR	12.6%
FIRR	6.1%

*1USD =43.2PHP (03/2012)

CIVIL WORKS

Main Weir	Height	5.0 m
	Crest Length	20.0 m
Headrace	Open Channel	3,980.0 m
	Tunnel	- m
Penstock		200.0 m
Tailrace		30.0 m
Access Road		8.0 km

EM / TL WORKS

Turbine	Type	Francis
	Number of Unit	two unit
Transmission	Line Voltage	- kV
	Length	8.3 km

ENVIRONMENT ISSUE

Protected Area	-
Volcano	-

PROJECT STUDY

Study	Type	Map Study Site Reconnaissance
	Date	2012
	Sponsor	JICA