

¹EXECUTIVE SUMMARY

Project Fact Sheet

Ngalan sa Proyekto	Agus Hydroelectric Power Plants	
Lokasyon sa Proyekto	Marawi City ug Saguiaran sa Lanao del Sur; Balo-i, og Iligan City sa Lanao del Norte	
Kategorya og Tipo sa Proyekto	3.2.3: Hydropower Facilities Rehabilitation (EMB MC 2014-005)	
Gidak-on sa Proyekto	Project	Installed Capacity (MW)
	Agus I	80
	Agus II	180
	Agus IV	158.1
	Agus V	55
	Agus VI	219
	Agus VII	54
	Total	746.1
Kalangkoban sa Mas Dagkong Bahin sa Proyekto	Kada Agus HPP nag-langkob sa sumusunod: - Reservoir - Dam - Powerhouse - Tailrace Channel/Approach Channel - Surge Chamber - Power Channel Ang Agus HPPs adunay sumusunod na mga dugang pasilidad: - Warehouses - Parking areas/garages - Multipurpose hall/gym - Annex buildings - Nature's Park - Function Halls - Canteens - Guardhouses/Guard Posts/ Military barracks/outposts - Housing Quarters - Recreational Facilities (basketball courts, volleyball courts, tennis courts, badminton courts, etc.) - Mechanical/Electrical Shops - Plant Nurseries - Stand-by Diesel GenSet house - Water refilling stations - Fuel oil storage tanks.	
Gasto sa Proyekto	PHP 12.5 Billion	
Panahon Sa Rehabilitasyon	January 2022	
Gibanabana Nga Tuig Sa Pagkompleto	2025	
Tigpasiugda sa Proyekto/ EIA Tig-andam	Proponent: Address: Contact Persons: Contact Details:	National Power Corporation (NPC) BIR Road corner Quezon Avenue, Diliman, Quezon City 1100, Philippines Mindanao Generation Headquarters, Maria Cristina, Iligan City, 9200 Lanao del Norte Mr. Edmundo A. Veloso, Jr. Vice President, NPC-Mindanao Generation (632) 9821-3541 to 80 – Quezon City Office (063) 221-9003 - Iligan Office

Kalangkaban Sa Deskripsyon Sa Proyekto

So Environmental Performance Report Management Plan (EPRMP) na pimbaalan para ko kapagalina ko Environmental Compliance Certificate (ECC) o National Power Corporations's Agus Hydroelectric Power Plants ECC reference no. ECC-CO-8910-016-201 a inibegay inako 14 January 1992. Nem (6) timan a Hydroelectric Power Plants a matatago sa Agus poon sa Marawi ago saguiaran Lanao del Sur taman sa Baloï ago Iligan City Lanao del Norte.

Aya a katimbelan iyan, na kataya so mga pagalinen ko ECC:

- Tanoren so capacity a Agus IV makapopoon sa 3 x 50 MW na baloyin a 3 x 52.7 MW.
- Tanoren so capacity a Agus VI makapopoon sa 3 x 50 MW ago 3 x 31 MW na baloyin a 3 x 50 MW ago 2 x 34.5 MW
- pagumanan so Environmental Management Plan (EMP) ago Environmental Monitoring Plan (EMoP) an makaayon ko mga bago a pangitaban ago standards a Environmental.
- ipagayon gyangkaya a EMP ago EMoP ko mga pangailay a dilikado sa gyangkaya a rehabilitation activities.
- Pagalinen so kadalem a mya aloy ko ECC condition no. 15 poon sa 702.4 masl na baloyin a 702.0 masl.

Oman e hydroelectric power plant na aden a mababaloy a mga component iyan datar o: reservoir, dam, powerhouse, tail race channel, approach channel, surge chamber and transmission line. So power plants na aya a ipagandar iyan na so kinetic engergy a makapopoon ko kapagundas a ig a pekabaloy a mechanical energy. Gya a nem timan (6) a hydroelectric power plants (maana gya a Agus I, Agus II, Agus IV, Agus V, Agus VI ago gya a Agus VII) na aden a katembelan a capacity nyan a 746.1 MW.

Process Documentation

i. EIA Team

Kataya so mga membro a EIA team a palaya den emplyedaoa NPC:

Team Member	Designation
Ma. Bernadeth B. Apos	Principal Engineer A
Dayamon C. Mao	Corporate Staff Officer C
John Anthony O. Quito	Principal Engineer A
Benigno V. Resurreccion	Principal Biologist B
Jabbar B. Abdul Azis	Senior Watershed Management Specialist
Jennisel B. Brillantes	Senior Engineer

ii. EIA Study Schedule ug Area

Ang talamdan sa mga buluhaton sa EPRMP ingon sa gipakita sa ubos na eskedyul.

Process	Date
Information, Education, ug Communication Campaign	14 October 2020 to 21 January 2021
Public Scoping	4 November 2020 to 21 January 2021
Drafting of EPRMP	22 January 2021 to 11 June 2021

iii. Mga Metodolohiya sa EIA

Kini na EPRMP na pimbaalan para sa compliance ko mga pangitaban a Presidential Decree 1586 ago DENR Administrative order 2003-30 para ko mga project a aden a kapapantagan a ECC nyan:

Ang pagtuman sa mga pamaagi:

EIA MODULE	PAMAAGI	KATUYUAN
YUTA	- Pagrepaso sa Master Plan sa onse (11) nga gidumala sa Watersheds na gi-andam sa NPC - Pagrepaso sa may kalabutan na geologic maps nga naglangkob sa study area - Pagrepaso sa mga reports nga may kalabutan sa biodiversity sa Lake Lanao-Agus River Watershed	- Pagtimbangtimbang sa pag-gamit sa yuta ug zoning para sa pagkaangay sa gisugyot nga proyekto - Pagtimbangtimbang sa posibleng epekto nga geologic hazard sa gisugyot nga kalamboan. - Pagkuha ug impormasyon sa mga katanuman ug kahayupan sa yuta didto sa gisugyot nga lokasyon sa proyekto
TUBIG	- Pagrepaso sa mga anaa nga monitoring data sa kalidad ug kantidad sa tubig gikan sa NPC - Pagrepaso sa Master Plan para sa onse (11) ka gidumalang Watersheds nga giandam sa NPC - Pagrepaso sa mga reports nga may kalabutan sa biodiversity sa Lake Lanao-Agus River Watershed	- Pag-determina sa kalidad ug kantidad sa tubig sa lugar - Pagrepaso sa pagsunod sa NPC sa mga DENR standards - Pagtimbangtimbang sa posibleng epekto sa proyekto sa freshwater ecosystem.
HA NGI N	- Pagrepaso sa Climatological Data ug Climate Change Projections gikan sa Philippine Atmospheric, Geophysical, ug Astronomical Services Administration (PAGASA) - Pagrepaso sa mga Self-Monitoring Reports on Ambient Air Quality sa NPC	- Pagrepaso sa pagsunod sa NPC sa mga DENR standards - Pagtimbangtimbang sa posibleng epekto sa proyekto sa kalidad sa hangin sa apektadong lugar
PEOPLE	- Pagrepaso sa Socio-Economic Profile sa mga komunidad sa apektadong lugar, konsultasyon sa mga hingtundan (focused group discussion, key informant interview sa mga lain-laing hingtundan) - Pagrepaso sa kalampusan sa Social Development Plan	- Pagtimbangtimbang sa posibleng epekto sa proyekto sa mga tawong naapektuhan - Pagdokumento sa mga opinyon sa mga hingtundan kabahin sa proyekto. - pagsiguro nga ang NPC muhatag ug mga programa sa social development angay sa mga apektadong komunidad.

iv. Scoping ug Public Participation

Information, Education, ug Communication (IEC) Campaign

Ang kampanya kabahin sa IEC og kalihokan sa pre-scoping para sa rehabilitasyon sa Agus I-VII Hydroelectric Power Plants (Agus IV-VII HPPs) nga gipahigayon ni-adtong Oktubre 14, 2020 hangtod sa Enero 21, 2021 nga naglambigit sa duha ka probinsiya, duha ka siyudad (Marawi og Iligan), tulo ka munisipyo (Saguiaran, Balo-i ug Matungao) ug 24 ka mga barangay.

Tungod sa pandemya nga COVID-19 ug mga striktong health ug safety protocols nga gipatuman sa Lanao del Sur ug Lanao del Norte ug mga kalambigitang siyudad/munisipyo ug

local government units (LGUs), ang kalihukan nga pre-scoping sa IEC nalimitahan lamang sa kurtesiya sa pagbisita ug pagsumite sa sulat/hangyo (sa pisikal o email) para sa IEC, FGD ug konsultasyon sa publiko ug pulong-pulong sa mga hingtundan. Ang iskedyul sa IEC, FGD ug public consultation nahimo pinaagi sa pagtawag sa mga LGUs ug barangay offices ug limitadong face-to-face interaksyon nga gitugutan. Sa ingon nga paagi, ang IECs, FGDs ug consultations nagasilbi sa ginagmay na grupo na tipok-tipok nahi-uyon sa pamaagi sa EMB Memorandum Circular (MC) 2020-30.

Ang kalihukan sa IEC pre-scoping naglangkob sa mga nalambigitang LGU. probinsya, syudad, munisipyo, ug barangay lebel IECs, FGDs ug konsultasyon nga nahimo.

Project	Province	City/ Municipality	Barangays	
Agus I	Lanao del Sur	Marawi City	Bubong Marawi Banggolo Fort Matampay Navarro/Datu Saber	Raya Saduc Rorogagus Rorogagus East Saduc Proper
Agus II	Lanao del Sur	Saguiaran	Batangan Limogao Lumbayangue Mipaga	Pawak Pendolunan Sunggod
Agus IV	Lanao del Norte	Balo-i	Maria Cristina Matampay Nangka	
		Matungao	Matampay Somiorang	
Agus V	Lanao del Norte	Iligan City	Ditucalan (disputed)	
		Balo-i	Maria Cristina (disputed)	
Agus VI	Lanao del Norte	Iligan City	Buru-un Ditucalan Maria Cristina	
Agus VII	Lanao del Norte	Iligan City	Buru-un Ditucalan Maria Cristina	

Public Scoping

Ang kalihokan nga Public Scoping para sa Proyekto gipahigayon gikan November 4, 2020 hangtod January 21, 2021 sa pagsunod sa mga giya nga gitakda sa **DENR Administrative Order 2017-15 (Guidelines on Public Participation under the Philippine Environmental Impact Statement System, PEISS)** ug **EMB MC 2020-30 (Interim Guidelines on Public Participation in the Implementation of PEISS During the State of National Public Health Emergency)**. Ilabi na sa **MC 2020-30** nagpahayag nga ang Public Scoping pwede mapahigayon pinaagi sa: (1) **Focus Group Discussions (FGDs)** matag sektor ug pagsunod sa pisikal nga pag-distansya; ug (2) Konsultasyon pinaagi sa online nga plataporma sama sa video- conferencing, webinar, ug uban pa.

Gihan-ay ang iskedyul sa **Public Scoping Activities** nga gipahigayon sa nalambigit nga mga LGUs ug barangays sa mga sumusunod nga Proyekto. Gipahigayon ang **Public Scoping** sa duha ka mga nagpasi-ugna nga probinsya, duha ka siyudad, tulo ka munisipyo ug 24 ka barangay.

Ang **key informant interviews (KII)** lamang ang gipahigayon sa Iligan City, nga nahimutangan sa Agus V, Agus VI ug Agus VII HPPs kay gilikayan sa mayor ang pagpahigayon ug dakong pundok-pundok para sa syudad tungod sa pandemya. Ang **public scoping** para sa Agus I ug II nga anaa nahimutang sa Marawi City ug Munisipyo sa Saguiaran nahimo sa rehiyonal, probinsyal, syudad/munisipyo ug barangay.

Gihimo ang **Face-to-face scoping** nga pulong-pulong subay sa pagtuman sa COVID-19 **health & safety protocols** nga gipahigayon sa LGUs. Ang mga opisyaes ug staff sa NPC MinGen nga nagbase sa Iligan City ug APERCU team leader ug staff nga nagbase sa Manila ang misalmot sa pulong-pulong ug konsultasyon nga IEC/FGD pinaagi sa **Zoom**.

Date	Host LGU	Barangay	Scoping Venue	No. of Participants
Agus I-II HPPs				
18 Nov 2020	BARMM	Regional Level	BARMM Compound	12
24 Nov 2020	PLGU Lanao del Sur	Provincial Level	Lanao del Sur Provincial Capitol	8
02 Dec 2020	Marawi City	City Level	Marawi City Hall	6
03 Dec 2020	Saguiaran	Municipal Level	Saguiaran Municipal Hall	24
11 Jan 2021	Saguiaran	Batangan	Saguiaran Covered Court	6
12 Jan 2021	Saguiaran	Mipaga	Saguiaran Covered Court	4
12 Jan 2021	Saguiaran	Lumbayangue	Saguiaran Covered Court	7
13 Jan 2021	Saguiaran	Pawak	Saguiaran Covered Court	3
14 Jan 2021	Saguiaran	Limogao	Saguiaran Covered Court	5
14 Jan 2021	Saguiaran	Sunggod	Saguiaran Covered Court	6
15 Jan 2021	Saguiaran	Pendolunan	Saguiaran Covered Court	10
18 Jan 2021	Marawi City	Bubong Marawi	Temporary Barangay Hall	14
18 Jan 2021	Marawi City	Fort	Fort Barangay Hall	16
19 Jan 2021	Marawi City	Datu Saber	Datu Saber Barangay Hall	9
19 Jan 2021	Marawi City	Matampay	Matampay Social Hall	13
20 Jan 2021	Marawi City	Banggolo	Temporary Barangay Hall	18
20 Jan 2021	Marawi City	Raya Saduc	Temporary Barangay Hall	5
20 Jan 2021	Marawi City	Saduc Proper	Temporary Barangay Hall	6
21 Jan 2021	Marawi City	Rorogagus East	Temporary Barangay Hall	12
21 Jan 2021	Marawi City	Rorogagus	Temporary Barangay Hall	21
Agus IV-VII HPPs				
04 Nov 2020	Matungao	Somiorang	Matungao Municipal Hall	8
04 Nov 2020	Matungao	Matampay	Matungao Municipal Hall	11
04 Nov 2020	Matungao	Municipal Level	Matungao Municipal Hall	28
19 Nov 2020	Iligan City	Ditucalan	Ditucalan Barangay Hall	14

Date	Host LGU	Barangay	Scoping Venue	No. of Participants
19 Nov 2020	Iligan City	Maria Cristina	Maria Cristina Barangay Hall	15
25 Nov 2020	Balo-i	Municipal Level	Balo-i Municipal Hall	17
26 Nov 2020	Lanao del Norte	Provincial Level	Lanao del Norte Provincial Capitol	6
01 Dec 2020	Balo-i	Nangka	Nangka Barangay Hall	14
01 Dec 2020	Balo-i	Ma. Cristina	Maria Cristina Barangay Hall	29
02 Dec 2020	Balo-i	Matampay	Matampay Barangay Hall	54
03 Dec 2020	Iligan City	Buru-un	Buru-un Barangay Hall	8
04 Dec 2020	Iligan City	City level KII	Iligan City Hall	2
			Total	411

Gi-tabulate ang mga datos sa ubos nga bahin mahitungod sa isyu ug pangutana atol sa pagpulong-pulong sa public scoping nga gipahigayon sa LGU sa Agus HPPs.

Issue Concern	Marawi City ¹										Saguiaran LGU ²								Matungao ³			Balo-i ⁴				Iligan City ⁵			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	1	2	3	1	2	3	4	1	2	3	4
<i>Project Description</i>																													
Rehabilitation will increase the capacity of the plants ug subsequently increase LGU income	✓										✓																		
When will the project start?																											✓		
What is the duration of project implementation?				✓																			✓						
How can the project ensure the safety of the people?						✓															✓		✓						
What can we get from the project?																					✓								
Project should have proper solid waste management ug should address existing problems on waste management.																					✓								
Install street lights for security purposes; it is very dark near the power plant																					✓								
I want to clarify if the implementation of the three projects is simultaneous																										✓			
I he siren does not assure that safety of riverside residents is assured; release of water immediately follows the siren																					✓			✓				✓	
Stakeholders want rehabilitation project to proceed	✓	✓	✓	✓	✓						✓								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Option 3; Build Back Better - Sustainable Development Goals	✓					✓	✓	✓	✓	✓	✓		✓			✓	✓	✓	✓	✓	✓		✓		✓	✓		✓	
Inform LGU on what is happening in the Agus Plants so they will know how to act if anything happens	✓																												
<i>Lug</i>																													
Project adhered to management plan of Lake Lanao Watershed Reservation		✓	✓										✓	✓			✓			✓		✓	✓			✓			
Project has existing lug tenure issues	✓																												
Lugslides were reported but were not attributed to the project																									✓		✓	✓	
There are observed changes in soil erosion ug should be addressed by NPC ug the LGU	✓							✓													✓								✓

¹ (1) Marawi City LGU; (2) Brgy Banggolo; (3) Brgy Bubong Marawi; (4) Brgy Datu Saber; (5) Brgy Fort; (6) Brgy Matampay; (7) Brgy Raya Saduc; (8) Brgy Rorogagus East; (9) Brgy Rorogagus Proper; (10) Brgy Saduc Proper

² (1) Saguiaran Municipal LGU; (2) Brgy Batangan; (3) Brgy Limogao; (4) Brgy Lumbayangue; (5) Brgy Mipaga; (6) Brgy Pawak; (7) Brgy Pendolunan; (8) Brgy Sunggod

³ (1) Matungao Municipal LGU; (2) Barangay Somiorang; (3) Barangay Matampay

⁴ (1) Balo-i Municipal LGU; (2) Barangay Nangka; (3) Barangay Maria Cristina; (4) Barangay Matampay

⁵ (1) Iligan City LGU; (2) Barangay Ditucalan; (3) Barangay Maria Cristina; (4) Barangay Buru-un

Issue Concern	Marawi City ¹										Saguiaran LGU ²								Matungao ³			Balo-i ⁴				Iligan City ⁵			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	1	2	3	1	2	3	4	1	2	3	4
There are observed changes in soil quality ug fertility																			✓										
Agus HPPs affected natural habitats positively ug negatively; i.e. cutting of trees before construction ug reforestation during operation																			✓		✓	✓				✓			
Water																													
Rehabilitation ug continuous project operation may decrease water levels in Lake Lanao since water requirement will be higher; NPC should have programs to mitigate the lowering of water level in Lanao Lake	✓										✓																		
Project induced flooding in downstream areas – flooding affects the nearest purok when water is released.								✓	✓													✓		✓	✓				✓
Flooding is due to heavy rains ug inadequate drainage system.			✓	✓	✓	✓	✓					✓				✓		✓											
Rehabilitation may cause flooding similar to Magat Dam.				✓		✓																							
Change in stream depth is observed during rainy season; shallowing in downstream areas of HPPS was observed						✓	✓							✓	✓		✓	✓	✓	✓	✓	✓	✓						
Projects resulted in depletion & competition for water resources				✓																	✓	✓		✓					
Barangay residents get water for domestic use (bathing, laundry, etc.) from Agus River		✓	✓					✓		✓		✓		✓	✓	✓													
Project caused threat to existence of freshwater species;																					✓	✓			✓				
Fish kills occur when floodgates are opened after long closure								✓	✓																				
NPC has an existing MOA with Balo-i LGU regarding flood control. What happened? We were not informed that DPWH will push through with the project.																					✓								
Balo-i Plains Flood Control Project was discussed in 2018; tripartite MOA between Balo-i LGU, NPC ug DPWH District Office was executed																					✓		✓						
Will the rehabilitation project address the flooding in Balo-i Plains?	✓																												
Are there wastes coming from the plant that will affect the freshwater ug seawater species?	✓																												✓
Blocking the river's natural flow will block the important migration routes of fish.																													✓
Projects affected surface ug groundwater quality																						✓							
Proliferation of water lilies in Agus River																				✓					✓				
Air																													
Address climate change issues because poor families ug communities will be affected greatly by this problem.																					✓								

Issue Concern	Marawi City ^a										Saguiaran LGU ^a								Matungao ^a			Balo-i ^a				Iligan City ^a			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	1	2	3	1	2	3	4	1	2	3	4
Noise levels increased during the construction ug operation of Agus HEPPs but noise level is tolerable			✓										✓	✓		✓	✓	✓						✓	✓	✓	✓		
<i>People</i>																													
Implementation of Agus HEPPs resulted in the displacement of settlers ug disturbance to properties	✓																					✓	✓			✓			
Lug tenure issues were addressed before construction	✓		✓			✓		✓			✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓		✓	✓	
Project has unresolved ROW/lug acquisition issues																						✓		✓		✓			✓
Project resulted in proliferation of informal settlers	✓										✓											✓		✓	✓	✓	✓		
The project had impacts on physical cultural resources, i.e. Muslim Cemetery was inundated	✓																			✓		✓			✓				
Some residents drown; there are no watchmen, barriers along riverbanks ug canals, safety warnings or signages; about two persons die every three to five years	✓		✓					✓	✓				✓		✓							✓		✓					
Local benefits such as enhancement of employment ug livelihood opportunities, increased business opportunities	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓		✓
LGU income (from national wealth tax ug income tax) increased due to operation of Agus HEPPs	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓		✓ ⁶	✓	✓	✓
LGU receives ug benefits from share identified in Electric Power Industry Reform Act (EPIRA)	✓	✓				✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓
LGU benefits from Social Development Program (SDP)/Corporate Social Responsibility (CSR) projects	✓							✓	✓		✓		✓			✓		✓		✓	✓	✓	✓	✓	✓	✓	✓		✓
Community electrification was implemented	✓	✓			✓			✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓		✓
LGU/Barangay actively participates in MMT	✓										✓											✓		✓			✓		
Project affected livelihood/yields of farmers								✓	✓										✓	✓		✓			✓	✓	✓		
Project affected livelihood/yields of fisherfolks										✓												✓	✓		✓	✓	✓		
The project affected recreation activities/benefited tourism											✓													✓		✓			✓
Project caused changes in peace ug order situation																						✓		✓		✓	✓		
Project hired locals during construction	✓	✓	✓	✓	✓			✓	✓	✓	✓		✓	✓				✓	✓			✓		✓	✓	✓	✓		✓
Hired workers were properly compensated	✓										✓		✓						✓			✓		✓	✓	✓	✓		✓
Workers were provided decent living spaces	✓																		✓			✓		✓	✓	✓	✓		✓
Project staff during operation were hired from host LGU	✓		✓	✓	✓				✓	✓	✓																		

⁶ Income tax only; Iligan City has no share in national wealth tax according to the City Mayor

Issue Concern	Marawi City ^a											Saguiaran LGU ^a								Matungao ^a			Balo-i ^a				Iligan City ^a			
	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	1	2	3	1	2	3	4	1	2	3	4	
Hired project staff are properly compensated	✓										✓																			
Labor issues are dealt through the labor union																											✓			
NPC has good relations with host LGU/barangay	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓	✓	✓		✓		✓		✓	
Other Issues ug Concerns																														
What will happen to the people in areas where the project is located?				✓			✓														✓			✓						
Inclusion of additional host barangay/s.																					✓									
Is the NPC sincere enough to recognize specifically the women's sector?																					✓									
The rehabilitation project will limit the occurrence of brownout, increase employment opportunities ug share in national wealth tax, CSR/SDP projects		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓	✓		✓			
The project plays a vital role in supporting further economic growth ug poverty alleviation.																				✓					✓					
Plant will not function during rehabilitation, therefore host LGU/barangay will not receive share in national wealth tax																					✓						✓	✓		
Residents living along the river will be endangered																			✓					✓						
Cultural difference should be respected. Iligan City has three cultures: Maranao, Lumads ug Christians																										✓				
Power interruptions during rehabilitation will affect the residents ug businesses		✓	✓	✓	✓	✓	✓	✓												✓						✓	✓			
Prioritize local employment ug increase local tax with the implementation of the rehabilitation project							✓				✓			✓		✓						✓	✓		✓	✓				
Residents, LGUs ug stakeholders are well informed about Agus HEPPs																			✓		✓			✓		✓	✓		✓	
Other Issues (suggested CSR/SDP projects, etc.)																														
Implement projects specific for vulnerable sectors																						✓								
Implement water supply ug drainage projects			✓																					✓						
Agus HEPPs implement effective environmental management interventions such as reforestation											✓																		✓	
NPC should communicate with Lanao del Norte Electric Cooperative (LANECO) since power is a bit expensive																			✓											

EIA Sumada

i. Sumada sa mga Alternatibo

Pagpili ug Lugar

Walay lainig lugar napilian subay sa Agus River cascade tungod kay aduna nay mga planta nga natukod ug operasyonal.

Pagpili sa Teknolohiya

Para sa rehabilitasyon sa Agus power plants, adunay gikonsiderar nga tulo (3) ka opsyon:

- *Opsyon 1:* Ibalik sa **rated capacity**, lugwayan iyang kinabuhi sa operasyon ug isiguro ang luwas nga paagi sa rehabilitasyon ug pagpuli sa ekwipo , ug mga kalambuan sa **operational performance** ug sa kondisyon pinaagi sa pag-instalar sa mga modernong kagamitan sa sistema sa pagmonitor, kontrolar, proteksyon ug dispatch.
- *Opsyon 2:* *Opsyon 1* ug mga dugang pamaagi aron mulambo ug mousbaw ang enerhiya og kapasidad sa mga generating units nga dili matandog ang natukod nga mga imprastraktura.
- *Opsyon 3:* *Opsyon 2* ug mga dugang pamaagi aron mulambo ug mousbaw ang enerhiya og kapasidad sa mga planta pinaagi sa pag-tangtang sa nakapugong sa dagayday sa tubig gikan sa Lake Lanao.

Ang National Power Corporation (NPC) mo-implementar sa rehabilitasyon pinaagi sa pag-ayo ug pag-ilis sa kinahanglang ilisan ang kasamtangan nga nahilakip na, nga mga power plant components. Ang NPC walay intensyon sa pagpasaka sa kapasidad ug produksyon sa enerhiya sa Agus power plants.

Ang Tinubdan

Ang Agus Hydroelectric Power Plants nagasalig sa kusog nga dagayday sa tubig para mahimong enerhiya. Ang proyekto giklasipikar nga **renewable energy project**. Ang Lake Lanao maoy tinubdan sa tubig nga kinahanglan sa pagtuyok sa turbina nga nag-average sa 150 m³/s.

No Project Option

Sa pagkakaran, ang HPPs ga-operate ubos sa iyang gi-instalar nga kapasidad ug kinahanglan i-upgrade ug i-modernize para mabalik ang daan nga disenyo sa kapasidad sa planta, mamenosan ang downtime, malugwayan ang operating life ug pagsiguro sa safety sa power complex. Ang mga planta naga-operate sulod sa tulo (3) ka dekada ug nasinati na sa problema tungod sa kadaan ug pagkaanam sa pagkadaot sa ekwipo.

ii. Sumada sa mga Epekto, Mitigasyon, ug Nahabiling Epekto

Ang sumada sa mga epekto, mitigasyon, ug nahabiling epekto gi-tabulate sa ubos nga bahin.

Environmental Component Likely to be Affected	Potential Impact	Options for Prevention/ Mitigation/ Enhancement	Residual Effects after Mitigation
Rehabilitation Phase			
The Lug	Generation of domestic solid waste	Proper handling, storage and disposal of solid waste based on Waste Management Guidelines	Workplace kept free of solid waste
The Lug The Water	Possible contamination due to storage of fuel	NPC implements the guidelines for fuel storage for respective plants	Potential spillage avoided.
The Lug The Water	Possible contamination due to storage of hazardous materials	NPC implements its guidelines and procedures on storage of hazardous materials.	Water contamination due to leakage of hazardous materials avoided
The Lug The Water	Accidental spill of materials during hauling	Require haulers to cover materials with canvass	Any accidental spills avoided
The Water	Siltation and sedimentation	Provision of deviation channels, sedimentation basin/silt traps	Water quality within DENR standards
The Water	Generation of domestic wastewater	Barracks shall include proper sanitation facilities for workers	Water pollution due to domestic water discharge avoided
The Air	Air pollution due to gaseous emissions	Regular maintenance of equipment; Emission testing of vehicles	Emissions from heavy equipment cannot be avoided. However, the contractor shall adhere to DENR standards.
The Air	Generation of dust and particulate emissions due to the use of electrical/mechanical equipment/tools and system	Proper housekeeping	Suppress dust emissions in the workplace
The Lug The Air	Noise and vibration due to rehabilitation activities, movement of materials/equipment	Scheduling of works during daytime	Receptors to be unaffected by noise and vibration
The People	Potential conflict between recruiters during workforce selection	Prioritization of local hiring per RA 6685	Hiring of local workers

Environmental Component Likely to be Affected	Potential Impact	Options for Prevention/ Mitigation/ Enhancement	Residual Effects after Mitigation
The People	Occupational safety hazard due to use of construction tools ug equipment Occupational safety hazard due to dangling wires/ power cables Occupational safety hazard due to use of electrical/mechanical equipment/tools ug system	Orientation ug site visit of locally-hired workers in the project area Use of PPEs ug other safety equipment based on Corporate Safety, Health ug Environment Manual	Employees are safe from occupational hazards
The People	Spread of COVID-19 in the workplace	Implementation of COVID-19 Protocols NPC will require the contractor to provide adequate on-site/nearby housing for migrant workers to avoid interaction with the local population as well as provide temporary isolation facilities for suspected COVID-19 cases.	Minimal or no COVID-19 infections
The People	Conflicts in the workplace due to cultural affiliations of workforce	Security Manual/Protocols	Conflicts in the workplace avoided
The People		Orientation of the workforce regarding cultural differences	
The People	Health hazard due to storage of hazardous substances	NPC implements its guidelines ug procedures on storage of hazardous materials.	Employees are safe from health hazards
The People	Gender-based related issues such as sexual harassment ug sexual exploitation	Gender-based violence (GBV) orientation of workforce	No cases of sexual harassment in the workplace
The People	Change of water levels upstream ug downstream due to water releases from dam poses safety risks of residents near the river	Timely advisories ug warnings	People safe from untoward incidents due to sudden changes of water levels

Environmental Component Likely to be Affected	Potential Impact	Options for Prevention/ Mitigation/ Enhancement	Residual Effects after Mitigation
Operation Phase			
The Lug: Geologic Hazards	Possible lug inundation in case of damage to the dam structure caused by seismic events.	Installation of Seismic Monitoring Recorders (SMRs) at Agus Plants	Reduced hazard of dam failure ug lug inundation as a result of early management of possible damage to the dam structure Limit casualties in the event of earthquakes
The Lug The Water	Possible contamination of lug ug water resources from solid ug hazardous waste generated during operation of Agus HPPs.	Proper hugling, storage ug disposal of solid ug hazardous waste based on Waste Management Guidelines	Prevent lug ug water contamination/pollution from solid ug hazardous wastes
The Water	Accumulation of sediments at the reservoirs of Agus HPPs	Management of the watershed to control soil erosion ug sedimentation	Reduced sedimentation of the reservoir
The Water	Proliferation of water hyacinth along the waterways can alter water clarity ug may reduce photosynthetic activity of microphytes It can also have negative impacts on the aesthetics of the waterways.	Daily collection of water hyacinth using weed harvester ug shredder.	Improved water clarity, aesthetics, ug photosynthetic activities of microphytes
The People: threat to public safety	Agus HPPs operations will increase water discharges/levels ug consequently contribute to hazard to public safety.	Established Rainfall ug Water Level Monitoring Stations & Control Stations within the Lake Lanao – Agus River watersheds used for forecasting of water inflows Monitoring of meteorological parameters in the area. Installed/operating sirens/signages in Agus HPPs used for warning residents near rivers on the hazard of water discharges from the plants.	Reduced exposure to hazards from increased water discharges/levels.

Environmental Component Likely to be Affected	Potential Impact	Options for Prevention/ Mitigation/ Enhancement	Residual Effects after Mitigation
The People	Exposure to occupational safety hazard due to use of electrical/mechanical equipment/tools ug system	Use of PPEs ug other safety equipment based on Corporate Safety, Health ug Environment Manual Compliance to the provisions of Occupational Safety ug Health Stugards.	Reduced exposure from occupational hazards
The People	Exposure to water-borne diseases due to water impoundment of Agus dams	Periodic monitoring of cases of water-borne diseases through the conduct of parasitological/malacological tests. Provide medical assistance should there be cases of a reservoir-induced water-borne diseases Medical/dental missions ug outreach programs conducted in the host communities.	No proliferation of water-borne diseases
The People	Security risks posed to plant personnel by exposure to the public, different cultures, or lawless elements	Implement Security Protocol Implement Social Development Plan ug Community Development Program	Reduced security risks of employees
Decommissioning ug Abugonment Phase			
The Lug The Water	Possible contamination of lug ug water resources from solid wastes, scraps, ug hazardous wastes generated	Proper hugling, storage ug disposal of domestic solid waste, construction debris, ug hazardous waste based on Waste Management Guidelines	No water/lug contamination/pollution from solid/hazardous wastes generated.
The Air	Possible increase in particulate matter (PM) from dust generation during demolition	Regular watering of demolition sites Applying canvas covers where necessary	Reduced PM from dust generation within DENR stugards.
The Air	Possible increase in air emission concentrations ug noise levels from heavy equipment.	Proper ug regular maintenance of heavy equipment. Installation of mufflers Performing of noisy activities during daytime	Reduced emission concentration ug noise levels within DENR stugards.

Environmental Component Likely to be Affected	Potential Impact	Options for Prevention/ Mitigation/ Enhancement	Residual Effects after Mitigation
The People	Possible inconvenience due to increased traffic volume along access roads to the project site	Coordination with LGU on the management of traffic flows near the project area.	Improved traffic flow ug reduced inconvenience to public
The People	Occupational safety hazard due to use of electrical/mechanical equipment/tools ug system	Use of PPEs ug other safety equipment based on Corporate Safety, Health ug Environment Manual	Reduced exposure of Agus personnel from occupational hazards.
The People	Loss of employment	Provision of 6 months' notice about the impending termination of employment Provision of compensation for affected personnel If possible, provision of re-training of personnel in preparation for other job openings	Loss of employment upon completion of rehabilitation projects.

iii. Mga Risiko og Pagduha-duha

Mga risiko sa **chemical storage area** ug gilahi nga **hazardous waste storage area**. Ang tanang HPPs nga naka-rehistro na **Hazardous Waste Generator**, mu-implementar sa **hazardous waste manifest system**, ug mugamit sa serbisyo sa DENR-registered **transport, storage, ug disposal (TSD)** nga pasilidad sa pagtuman sa RA 6969. Gamay ra ang risiko tungod sa pagsubay sa kasamtangang mga lakang nga nahimutang na.

Ang natural nga mga peligro mahimong hinungdang risiko sa operasyon sa Agus HPPs. Ang kusog nga pag-uyog sa yuta nga mahimong hinungdan sa pagkaguba sa mga dam, nga muresulta sa pagbaha sa palibot sa HPPs. Bisan pa niana, ang NPC makapasalig nga ang mga dams sa Agus HPPs gidesenyo og gitukod base sa **good/sound engineering practices/methods**. Dugang pa, ang **Marawi Lake Regulation Dam (MLRD)** gitukod para ma-kontrolar ang pag-awas sa tubig. Ang NPC nag-implementar sa makanunayong pagpahigayon sa mandatory dam inspeksyon ug assessment aron mamatikdan ang posibleng pagkadaot sa dam.