



Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool

May 2022

Preparation Stage

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Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool



About the HESG	The Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool (HESG) enables hydropower project proponents and investors to identify and address gaps against good international industry practice. The HESG is based on the assessment framework of the Hydropower Sustainability Assessment Protocol (HSAP) and draws from the definitions of good international industry practice of the Hydropower Sustainability Guidelines on Good International Industry Practice (HGIIP). Projects that meet the good practice requirements of the HESG are eligible for certification against the Hydropower Sustainability Standard following the Harmonisation with the Hydropower Sustainability Tools process.
Intended users and uses	The HESG includes three separate stage tools: Preparation, Implementation and Operation. These reflect the different stages of hydropower development and have been designed to be used as standalone documents. Each tool provides an action plan to help project teams address any gaps against good practice.
	Official HESG assessments are carried out by accredited assessors, who take an evidence-based approach. All findings are supported by objective evidence, which is factual, reproducible, objective and verifiable. The HESG is most effective when operators and developers commit to implement the recommendations provided and resolve identified significant gaps. In addition, the tool is aligned with the safeguards and standards of international financial institutions and can be used to attract climate-aligned investment.
	Hydropower development and operation may involve public entities, private companies or combined partnerships, and responsibilities may change as the project progresses through its life cycle. It is intended that the organisation with the primary responsibility for a project at its particular life-cycle stage will have a central role in any HESG assessment.
Structure of the tool	The HESG comprises 12 sections that cover the environmental, social, governance and climate change topics of the HSAP and HGIIP. A summary at the beginning of the report presents any significant gaps against basic good practice and outlines an action plan for improved performance. Within each section, requirements for good international industry practice are presented and project findings are provided. For each finding, a key indicates whether the requirement is met. A summary section analyses significant gaps and identifies each one with the symbol •.
Supporting resources	Additional guidance on the structure, content and history of the HESG can be found online at: www.hydrosustainability.org
Version date	May 2022

A. Assessment Details

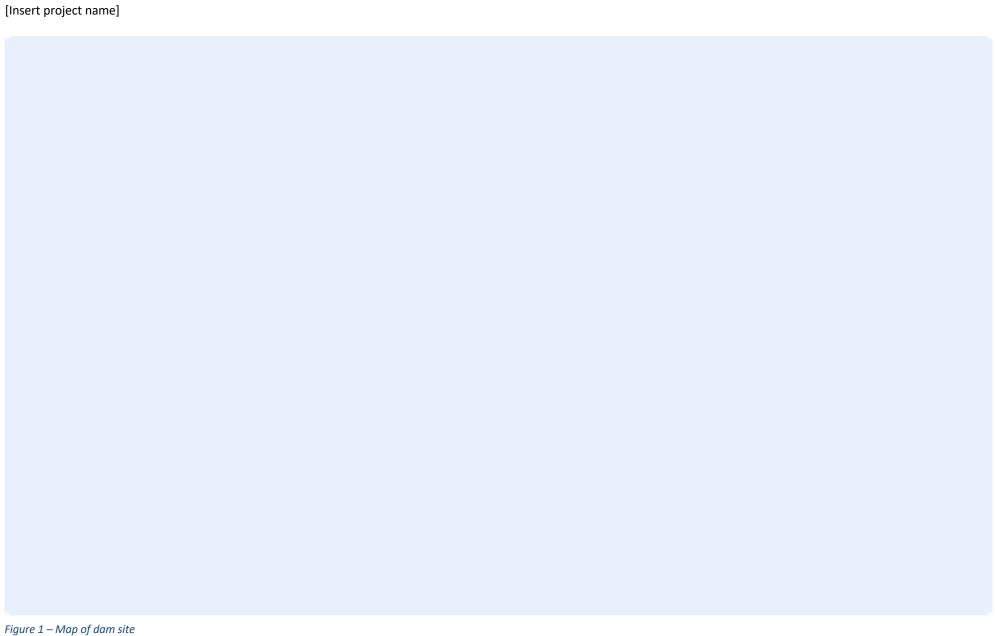
Project sponsor	
Assessor(s)	
Assessment objective	
Assessment dates	
Assessment report date	
Prepared for	
Limitations of the assessment	

A. Assessment Details HESG | 5

B. Project Details

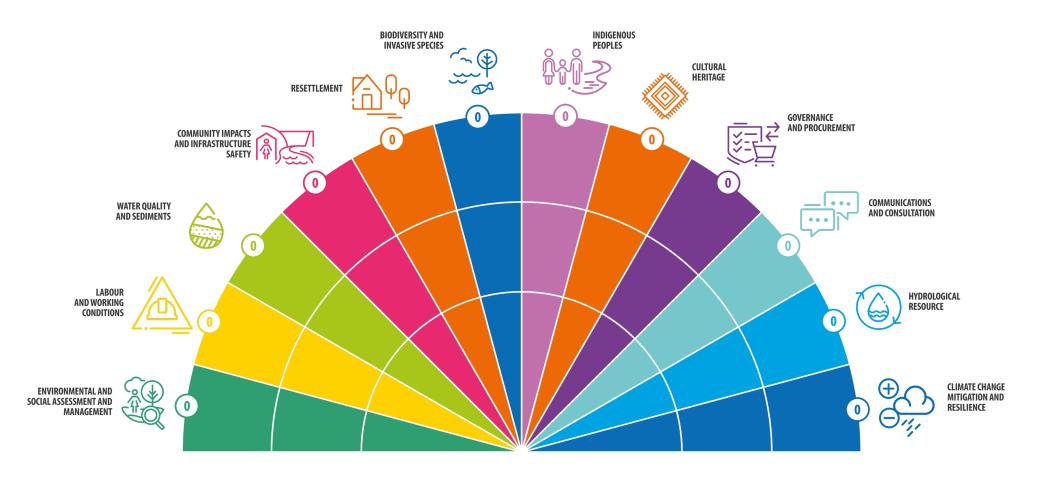
Project name	
Country	
Location	
Purpose	
Developer / Owner	
Financer(s)	
Installed capacity (MW)	
Construction start date (planned or actual)	
Commercial operations date (planned or actual)	
Annual average generation (GWh / year)	
Associated infrastructure: road(s) (length)	
Transmission lines and sub-stations (names, lengths and capacities)	
Total cost (USD m)	
Annual operating costs (USD m)	
Project development cost not including transmission (USD m)	
Transmission costs for project development (USD m)	
Specific investment cost (USD m / MW)	
Levelised energy cost (USD / kWh)	
Dam type	
Dam height (m)	
Dam length at crest (m)	
Units (number, type, MW)	
Reservoir area at Full Supply Level (FSL) (km²)	
Average net head at FSL (m)	
Average flow (m ³ / s)	
Design flow (m ³ / s)	
Load factor	
Number of physically displaced households	
Power density (W / m²)	
Emissions intensity (gCO ₂ e / kWh)	
Contacts / website	

B. Project Details HESG | 6



B. Project Details

C. HESG Gap Analysis Diagram



C. HESG Gap Analysis Diagram

D. Significant gaps

In the species species and the species	pu
1. Environmental and Social Assessment and Management 2. Labour and Working Conditions 3. Water Quality and Sediments 4. Community Impacts and Infrastructure Safety 5. Resettlement 5. Resettlement 6. Biodiversity and Invasive Species 7. Indigenous Peoples 7. Indigenous Peoples 9. Governance and Procurement 9. Governance and Procurement 10. Communications and Consultation 11. Hydrological Resource	12. Climate Change Mitigation and Resilience
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
NUMBER OF SIGNIFICANT GAPS BY SECTION: TOTAL NUMBER OF SIGNIFICANT GAPS:	

D. Significant Gaps

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E. Environmental and Social Action Plan (ESAP)

The following actions are recommended to address and resolve the significant gaps.							
Section		Action(s)	Responsibility	Indicator of achievement	Timeframe		
	Significant gaps				<12 months	12-24 months	>24 months
1						ĺ	

1 Environmental and Social Assessment and Management



Scope and Principle

This section addresses the assessment and planning processes for environmental and social impacts associated with project implementation and operation throughout the area of impact of the project, the contribution of the project in meeting demonstrated needs for water and energy services, and the evaluation and determination of project siting and design options. The principle is that environmental and social impacts are identified and assessed, and that avoidance, minimisation and mitigation measures are designed and implemented.

Background	
Identify the main environmental and social issues during	Click here to enter text.
implementation	
Identify the main environmental and social issues during operation	Click here to enter text.
Identify the environmental regulator	Click here to enter text.
Identify other regulators (e.g. on land, water use, Indigenous	Click here to enter text.
Peoples)	
Summarise the ESIA regulatory requirements	Click here to enter text.
List the key license conditions/voluntary commitments	Click here to enter text.
Total environmental and social costs in project development,	Click here to enter text.
including resettlement costs	
Description of the non-physical cultural heritage in the project area	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
1.1 Assessment			
Assessments of project environmental and social impacts	Choose an item.	Click here to enter text.	
Assessments address:			
• project implementation	Choose an item.	Click here to enter text.	
• project operation	Choose an item.	Click here to enter text.	
• associated facilities	Choose an item.	Click here to enter text.	

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
• cumulative impacts	Choose an item.	Click here to enter text.
role and capacity of third parties	Choose an item.	Click here to enter text.
• impacts associated with primary suppliers	Choose an item.	Click here to enter text.
Assessments have been prepared using appropriate expertise	Choose an item.	Click here to enter text.
A baseline has been established and well-documented for the pre-project condition against which post-project changes can be compared	Choose an item.	Click here to enter text.
Assessment of needs for water and energy services	Choose an item.	Click here to enter text.
Assessment of options to meet water and energy needs	Choose an item.	Click here to enter text.
Assessment of national and regional policies and plans relevant to those needs	Choose an item.	Click here to enter text.
Social and environmental considerations, including regulatory considerations, have been analysed at an early stage in preliminary project designs and options	Choose an item.	Click here to enter text.
1.2 Management		
Environmental and social management plans and processes have been developed	Choose an item.	Click here to enter text.
Plans address project implementation	Choose an item.	Click here to enter text.
Plans address project operation	Choose an item.	Click here to enter text.
Plans have been prepared using appropriate expertise (internal and external)	Choose an item.	Click here to enter text.
Plans address all key social and environmental issues	Choose an item.	Click here to enter text.
Plans address construction-related waste, noise, air quality, land disturbance and rehabilitation	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
Environmental and social impact assessment and key associated management plans are publicly disclosed	Choose an item.	Click here to enter text.
An optimisation process has been undertaken to assess the project siting and design options	Choose an item.	Click here to enter text.
1.3 Outcomes		
Environmental and social plans avoid, minimise and mitigate negative impacts with no significant gaps	Choose an item.	Click here to enter text.
The strategic fit of the project with needs for water and energy services, and relevant policies and plans can be demonstrated	Choose an item.	Click here to enter text.
The final project siting and design has responded to environmental and social considerations	Choose an item.	Click here to enter text.
The project can pay for social and environmental plans and commitments	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

2 Labour and Working Conditions



Scope and Principles

This section addresses labour and working conditions, including employee and contractor opportunity, equity, diversity, health and safety. The principle is that workers are treated fairly and protected.

Background	
Labour requirements during implementation (full-time equivalent)	Click here to enter text.
Labour requirements during operation (full-time equivalent)	Click here to enter text.
Applicable key human resources regulations	Click here to enter text.
Applicable key occupational health and safety (OH&S) regulations	Click here to enter text.
Identify the regulator for labour law and OH&S	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
2.1 Assessment		
Assessment of human resource and labour management requirements	Choose an item.	Click here to enter text.
The assessment includes project occupational health and safety issues, risks, and management measures	Choose an item.	Click here to enter text.
2.2 Management		
Human resource and labour management policies, plans and processes have been developed for project implementation	Choose an item.	Click here to enter text.
Human resource and labour management policies, plans and processes have been developed for project operation	Choose an item.	Click here to enter text.

2. Labour and Working Conditions HESG | 14

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
These plans cover all labour management planning components, including those of contractors, subcontractors and intermediaries	Choose an item.	Click here to enter text.
2.3 Outcomes		
There are no identified inconsistencies of labour management policies, plans and practices with internationally recognised labour rights	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

2. Labour and Working Conditions HESG | 15

3 Water Quality and Sediments



Scope and Principle

This section addresses the management of water quality, erosion and sedimentation issues associated with the project. The principle is that water quality in the vicinity of the project is not adversely impacted by project activities, and that erosion and sedimentation caused by the project are managed responsibly and do not present problems with respect to other social, environmental and economic objectives.

Background		
Water Quality		
Description of water quality	Click here to enter text.	
Key water quality issues	Click here to enter text.	
Main influences on water quality	Click here to enter text.	
Sedimentology		
Key sediment issues	Click here to enter text.	
Sediment load (tonnes/year)	Click here to enter text.	
Catchment area at the dam	Click here to enter text.	
Other information	Click here to enter text.	

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
3.1 Assessment		
Water quality issues assessment	Choose an item.	Click here to enter text.
Erosion and sedimentation issues assessment	Choose an item.	Click here to enter text.
Identification of erosion and sedimentation impacts that may be caused by the project	Choose an item.	Click here to enter text.
Identification of erosion and sedimentation issues that may impact on the project	Choose an item.	Click here to enter text.
An understanding of the sediment load and dynamics for the affected river system	Choose an item.	Click here to enter text.
3.2 Management		

3. Water Quality and Sediments HESG | 16

Poguiroment	Requirement is met:	Findings and Observations
Requirement	yes (�) or no (╳)	Findings and Observations
Plans and processes to address identified		
water quality issues have been developed for	Choose an item.	Click here to enter text.
project implementation		
Plans and processes to address identified		
water quality issues have been developed for	Choose an item.	Click here to enter text.
project operation		
Plans and processes to address identified		
erosion and sedimentation issues have been	Choose an item.	Click here to enter text.
developed for project implementation		
Plans and processes to address identified		
erosion and sedimentation issues have been	Choose an item.	Click here to enter text.
developed for project operation		
3.3 Outcomes		
3.5 Outcomes		
Plans avoid, minimise and mitigate negative		
water quality impacts arising from project	Choose an item.	Click here to enter text.
activities		
Plans avoid, minimise and mitigate erosion		
and sedimentation issues arising from project	Choose an item.	Click here to enter text.
activities		
Plans avoid, minimise and mitigate erosion		
and sedimentation issues that may impact on	Choose an item.	Click here to enter text.
the project		

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

3. Water Quality and Sediments HESG | 17

4 Community Impacts and Infrastructure Safety



Scope and Principle

This section addresses impacts of the project on project-affected communities, including economic displacement, impacts on livelihoods and living standards, public health impacts, and impacts to rights, risks and opportunities of those affected by the project. This section also addresses project benefits and infrastructure safety during project preparation, implementation and operation. The principle is that livelihoods and living standards impacted by the project are improved relative to pre-project conditions for project-affected communities, and that life, property and community assets and resources are protected from the consequences of dam failure and other infrastructure safety risks. This section does not address requirements that relate to physical displacement or to Indigenous Peoples, which are addressed in Section 5 and 7. Other interested parties and groups are addressed in Section 10.

Background	
Community Impacts and Benefits	
Description of project-affected communities and how they are	Click here to enter text.
affected (distinguish between directly affected vs economically	
displaced vs other affected communities and include number of	
people and households)	
Agencies relevant to land acquisition	Click here to enter text.
Agencies relevant to livelihood restoration and project benefits	Click here to enter text.
Infrastructure Safety and Public Health	
Type of dam	Click here to enter text.
Dam height (m)	Click here to enter text.
Probable maximum flood (m³/s)	Click here to enter text.
Design flood (expressed as estimated flood with return period)	Click here to enter text.
Spillway capacity (m³/s)	Click here to enter text.
Spillway height (masl)	Click here to enter text.
Headrace length (m)	Click here to enter text.
Headrace width (m)	Click here to enter text.
Headrace capacity (m³/s)	Click here to enter text.
Seismicity	Click here to enter text.
Geology	Click here to enter text.
Dam safety regulatory authorities	Click here to enter text.
Local presence/capacity of emergency services	Click here to enter text.
Potential safety risks in this context	Click here to enter text.

Degree of risk of dam failure and in what way	Click here to enter text.
Population at risk of dam break (locations, numbers)	Click here to enter text.
Dam safety standards followed	Click here to enter text.
Agencies relevant to dam safety	Click here to enter text.
Other infrastructure safety issues	Click here to enter text.
Description of key public health issues	Click here to enter text.
Agencies relevant to public health	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
4.1 Assessment		
Community Impacts and Benefits		
An assessment of issues relating to project-affected communities	Choose an item.	Click here to enter text.
This assessment utilised local knowledge	Choose an item.	Click here to enter text.
An assessment of opportunities to increase the development contribution of the project through additional benefits and/or benefit sharing strategies	Choose an item.	Click here to enter text.
The pre-project baseline against which delivery of benefits can be evaluated post-project is well-documented	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
An assessment of dam and other infrastructure safety risks during project preparation, construction, and operation	Choose an item.	Click here to enter text.
This assessment was conducted using appropriate expertise	Choose an item.	Click here to enter text.
Public health issues assessment	Choose an item.	Click here to enter text.
This assessment includes public health system capacities and access to health services	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
This assessment has considered health needs, issues and risks for different community groups	Choose an item.	Click here to enter text.
4.2 Management		
Community Impacts and Benefits		
Management plans and processes for issues that affect project-affected communities have been developed	Choose an item.	Click here to enter text.
These plans and processes include monitoring procedures, utilising local expertise when available	Choose an item.	Click here to enter text.
If there are formal agreements with project- affected communities, these are publicly disclosed	Choose an item.	Click here to enter text.
Project benefit plans and processes have been developed for project implementation that incorporate additional benefit or benefit sharing commitments	Choose an item.	Click here to enter text.
Project benefit plans and processes have been developed for project operation that incorporate additional benefit or benefit sharing commitments	Choose an item.	Click here to enter text.
Commitments to project benefits are publicly disclosed	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
Dam and other infrastructure safety management plans and processes have been developed for project implementation	Choose an item.	Click here to enter text.
Dam and other infrastructure safety management plans and processes have been developed for project operation	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
These plans have been developed in conjunction with relevant regulatory and local authorities	Choose an item.	Click here to enter text.	
Plans provide for communication of public safety measures	Choose an item.	Click here to enter text.	
Emergency response plans include awareness and training programmes and emergency response simulations	Choose an item.	Click here to enter text.	
Dam safety is independently reviewed	Choose an item.	Click here to enter text.	
Plans and processes to address identified public health issues have been developed for project implementation	Choose an item.	Click here to enter text.	
Plans and processes to address identified public health issues have been developed for project operation	Choose an item.	Click here to enter text.	
4.3 Outcomes	4.3 Outcomes		
Community Impacts and Benefits			
Plans provide for livelihoods and living standards impacted by the project to be improved	Choose an item.	Click here to enter text.	
Plans provide for economic displacement to be fairly compensated, preferably through provision of comparable goods, property or services	Choose an item.	Click here to enter text.	
Plans deliver benefits for communities affected by the project	Choose an item.	Click here to enter text.	
Infrastructure Safety and Public Health	Infrastructure Safety and Public Health		
Plans avoid, minimise and mitigate safety risks	Choose an item.	Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
Plans avoid, minimise and mitigate negative		
public health impacts arising from project	Choose an item.	Click here to enter text.
activities		

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

5 Resettlement



Scope and Principle

This section addresses physical displacement arising from the hydropower project development. The principle is that the dignity and human rights of those physically displaced are respected; that these matters are dealt with in a fair and equitable manner; and that livelihoods and standards of living for resettles and host communities are improved. This section does not address those that are only economically displaced, who are addressed in Section 4.

Background		
Does the project require or result in any physical displacement of pec	ple? Please state the evidence on which this determination is made.	
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant	Click here to enter text.	
·		
Description of physically displaced communities and how they are	Click here to enter text.	
displaced (distinguish between permanently vs temporarily and		
include number of people and households)		
Name and number of settlements	Click here to enter text.	
Agencies relevant to land acquisition	Click here to enter text.	
Agencies relevant to livelihood restoration	Click here to enter text.	
Other relevant information	Click here to enter text.	

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
5.1 Assessment		
An assessment of the resettlement implications of the project has been undertaken early in the project preparation stage	Choose an item.	Click here to enter text.
This has established the socio-economic baseline for resettlement for potential resettlees and host communities	Choose an item.	Click here to enter text.

5. Resettlement HESG | 23

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
This has included an economic assessment of required resettlement including ongoing costs for improvement in living standards	Choose an item.	Click here to enter text.	
5.2 Management			
A Resettlement Action Plan and associated processes have been developed for project implementation	Choose an item.	Click here to enter text.	
A Resettlement Action Plan and associated processes have been developed for project operation	Choose an item.	Click here to enter text.	
The RAP and associated processes have been developed in a timely manner	Choose an item.	Click here to enter text.	
The RAP or associated processes include:	The RAP or associated processes include:		
up-to-date socio-economic baseline	Choose an item.	Click here to enter text.	
compensation framework	Choose an item.	Click here to enter text.	
grievance mechanisms	Choose an item.	Click here to enter text.	
monitoring procedures	Choose an item.	Click here to enter text.	
Formal agreements with resettlees and host communities are publicly disclosed	Choose an item.	Click here to enter text.	
5.3 Outcomes			
Plans provide for resettlement to be treated in a fair and equitable manner	Choose an item.	Click here to enter text.	
Resettlees and host communities will experience a timely improvement in livelihoods and living standards	Choose an item.	Click here to enter text.	

5. Resettlement HESG | 24

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

5. Resettlement HESG | 25

6 Biodiversity and Invasive Species



Scope and Principle

This section addresses ecosystem values, habitat and specific issues such as threatened species and fish passage in the catchment, reservoir and downstream areas, as well as potential impacts arising from pest and invasive species associated with the project. The principle is that there are healthy, functional and viable aquatic and terrestrial ecosystems in the project-affected area that are sustainable over the long-term, and that biodiversity impacts arising from project activities are managed responsibly.

Background	
Short description of the ecological region in the project area	Click here to enter text.
Protected areas (national parks and reserves etc) and their distance	Click here to enter text.
from the project	
Critical habitats in the project area, including important bird areas,	Click here to enter text.
hotspots of endemism etc.	
# threatened species in the directly affected area: terrestrial	Click here to enter text.
# threatened species: aquatic	Click here to enter text.
Any other species of conservation importance	Click here to enter text.
Migratory pathways	Click here to enter text.
Invasive species: terrestrial	Click here to enter text.
Invasive species: aquatic	Click here to enter text.
Key threats to biodiversity	Click here to enter text.
Agencies involved in biodiversity conservation	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
6.1 Assessment		
Assessment of terrestrial biodiversity	Choose an item.	Click here to enter text.
Assessment of aquatic biodiversity including		
passage of aquatic species and loss of	Choose an item.	Click here to enter text.
connectivity to significant habitat		
Assessment of risks of invasive species	Choose an item.	Click here to enter text.

6. Biodiversity and Invasive Species

Requirement	Requirement is met: yes (�) or no (※)	Findings and Observations
6.2 Management		
Plans and processes to address identified biodiversity issues have been developed for project implementation	Choose an item.	Click here to enter text.
Plans and processes to address identified biodiversity issues have been developed for project operation	Choose an item.	Click here to enter text.
6.3 Outcomes		
Plans avoid, minimise, mitigate and compensate negative biodiversity impacts arising from project activities with no significant gaps	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

6. Biodiversity and Invasive Species HESG | 27

7 Indigenous Peoples



Scope and Principle

This section addresses the rights at risk and opportunities of Indigenous Peoples with respect to the project, recognising that as social groups with identities distinct from dominant groups in national societies, they are often the most marginalised and vulnerable segments of the population. The principle is that the project respects the dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resource-based livelihoods of Indigenous Peoples in an ongoing manner throughout the project life.

Background	
Are any of the affected people Indigenous Peoples? Please state the evidence on which this determination is made.	
Yes, this section is relevant	Click here to enter text.
No, this section is not relevant	Click here to enter text.

	Add columns for each Indigenous People
Brief description of the peoples and their culture, lands, and	Click here to enter text.
representation	
Directly affected communities and how they are affected	Click here to enter text.
Other affected indigenous communities	Click here to enter text.
# households physically displaced	Click here to enter text.
# households economically displaced	Click here to enter text.

Agencies relevant to Indigenous Peoples	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
7.1 Assessment		
An assessment of the representation of Indigenous Peoples in the project-affected community	Choose an item.	Click here to enter text.

7. Indigenous Peoples HESG | 28

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
The assessment includes identification of their rights at risk in relation to the project	Choose an item.	Click here to enter text.
The assessment utilised local knowledge and expertise	Choose an item.	Click here to enter text.
7.2 Management		
Plans and processes have been developed for project implementation to address the Indigenous Peoples' rights at risk	Choose an item.	Click here to enter text.
Plans and processes have been developed for project operation to address the Indigenous Peoples' rights at risk	Choose an item.	Click here to enter text.
Formal commitments are publicly disclosed	Choose an item.	Click here to enter text.
7.3 Stakeholder Engagement		
Good-faith consultation with Indigenous Peoples' institutions of representation and decision-making, as determined by them, has been carried out	Choose an item.	Click here to enter text.
This consultation has been:		
appropriately timed	Choose an item.	Click here to enter text.
culturally appropriate	Choose an item.	Click here to enter text.
• two-way	Choose an item.	Click here to enter text.
A mutually-agreed disputes procedure is in place	Choose an item.	Click here to enter text.
7.4 Stakeholder Support		
Free, Prior and Informed Consent has been achieved with respect to the Indigenous Peoples' rights at risk following the principle of proportionality	Choose an item.	Click here to enter text.
7.5 Outcomes		

7. Indigenous Peoples HESG | 29

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
Plans provide for negative impacts of the project to Indigenous Peoples' rights to be avoided, minimised, mitigated or compensated with no significant gaps	Choose an item.	Click here to enter text.
Plans provide some practicable opportunities for positive impacts to be achieved	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1. • 2.

7. Indigenous Peoples HESG | 30

8 Cultural Heritage



Scope and Principle

This section addresses cultural heritage, with specific reference to physical cultural resources, at risk of damage or loss by the hydropower project and associated infrastructure impacts (e.g. new roads, transmission lines). The principle is that physical cultural resources are identified, their importance is understood, and measures are in place to address those identified to be of high importance. This section does not address non-physical cultural resources, which are addressed in Section 1 and/or in Sections 5 and 7 when relevant.

Background		
Does the project affect any physical cultural resources? Please state the evidence on which this determination is made.		
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant	Click here to enter text.	

Sites of physical cultural heritage affected by or in proximity to the	How they are affected
project-affected areas	
Click here to enter text.	Click here to enter text.

Agencies responsible for cultural heritage	Click here to enter text.
Other important local or regional cultural heritage values and issues	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
8.1 Assessment			
A cultural heritage assessment has been undertaken	Choose an item.	Click here to enter text.	
The assessment includes:	The assessment includes:		
 identification and recording of physical cultural resources 	Choose an item.	Click here to enter text.	
 evaluation of the relative levels of importance 	Choose an item.	Click here to enter text.	

8. Cultural Heritage HESG | 31

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
 identification of any risks arising from the project 	Choose an item.	Click here to enter text.
8.2 Management		
Plans and processes to address physical cultural resources have been developed for project implementation	Choose an item.	Click here to enter text.
Plans and processes to address physical cultural resources have been developed for project operation	Choose an item.	Click here to enter text.
Plans include arrangements for chance finds	Choose an item.	Click here to enter text.
Plans ensure that cultural heritage expertise will be on site and regularly liaised with by the project management team during construction	Choose an item.	Click here to enter text.
8.3 Outcomes		
Plans avoid, minimise, mitigate and compensate negative impacts on cultural heritage arising from project activities with no significant gaps	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

8. Cultural Heritage HESG | 32

9 Governance and Procurement



Scope and Principle

This section addresses corporate and external governance considerations for the project, and all project-related procurement including works, goods and services. The principle is that the developer has sound corporate business structures, policies and practices, and that procurement processes are equitable, transparent and accountable.

Background	
Key information on political context and public sector risks	Click here to enter text.
Key information on corporate ownership and governance	Click here to enter text.
Details of the concession, if applicable	Click here to enter text.
Key licensing or permitting requirements	Click here to enter text.
Key information on expected procurement strategy for this project	Click here to enter text.
(EPC, BOOT, etc)	
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
9.1 Assessment		
Assessments have been undertaken of the follo	wing through the proje	ct development cycle:
political and public sector governance issues	Choose an item.	Click here to enter text.
corporate governance requirements and issues	Choose an item.	Click here to enter text.
 major supply needs, supply sources, relevant legislation and guidelines, supply chain risks and corruption risks 	Choose an item.	Click here to enter text.
9.2 Management		
Processes are in place to manage the following:		
 corporate, political and public sector risks 	Choose an item.	Click here to enter text.

9. Governance and Procurement HESG | 33

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
compliance	Choose an item.	Click here to enter text.	
 social and environmental responsibility 	Choose an item.	Click here to enter text.	
grievance mechanisms	Choose an item.	Click here to enter text.	
 ethical business practices 	Choose an item.	Click here to enter text.	
transparency	Choose an item.	Click here to enter text.	
Policies and processes are communicated internally and externally as appropriate	Choose an item.	Click here to enter text.	
Independent review mechanisms are utilised to address sustainability issues in cases of project capacity shortfalls, high sensitivity of particular issues, or the need for enhanced credibility	Choose an item.	Click here to enter text.	
Procurement plans and processes have been developed for project implementation	Choose an item.	Click here to enter text.	
Procurement plans and processes have been developed for project operation	Choose an item.	Click here to enter text.	
9.3 Conformance and Compliance			
The project has no major non-compliances relating to governance	Choose an item.	Click here to enter text.	
Processes and objectives relating to procureme	Processes and objectives relating to procurement have been and are on track to be met with:		
no major non-compliances	Choose an item.	Click here to enter text.	
no major non-conformances	Choose an item.	Click here to enter text.	
Any procurement related commitments have been or are on track to be met	Choose an item.	Click here to enter text.	
9.4 Outcomes			
There are no significant unresolved corporate and external governance issues identified	Choose an item.	Click here to enter text.	
Procurement of works, goods and services across major project components is:			
equitable	Choose an item.	Click here to enter text.	
efficient	Choose an item.	Click here to enter text.	
transparent	Choose an item.	Click here to enter text.	

9. Governance and Procurement

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
• accountable	Choose an item.	Click here to enter text.
• ethical	Choose an item.	Click here to enter text.
• timely	Choose an item.	Click here to enter text.
Contracts are progressing or have been concluded within budget or changes on contracts are clearly justifiable	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

9. Governance and Procurement HESG | 35

10 Communications and Consultation



Scope and Principle

This section addresses the identification and engagement with project stakeholders, both within the company as well as between the company and external stakeholders (e.g. affected communities, governments, key institutions, partners, contractors, catchment residents, etc). The principle is that stakeholders are identified and engaged in the issues of interest to them, and communication and consultation processes establish a foundation for good stakeholder relations throughout the project life. Communications and consultation requirements unique to Indigenous Peoples are found in Section 7.

Background		
Directly affected community-level stakeholders	Click here to enter text.	
Directly affected institutional-level stakeholders	Click here to enter text.	
Other relevant information	Click here to enter text.	

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
10.1 Assessment		
Stakeholder mapping has been undertaken to identify and analyse stakeholders	Choose an item.	Click here to enter text.
It establishes those that are directly affected	Choose an item.	Click here to enter text.
It establishes communication requirements and priorities	Choose an item.	Click here to enter text.
10.2 Management		
Communications and consultation plans and processes have been developed at an early stage	Choose an item.	Click here to enter text.
They outline communication and consultation needs and approaches for various stakeholder groups and topics	Choose an item.	Click here to enter text.
They are applicable to project preparation, implementation and operation	Choose an item.	Click here to enter text.

10. Communications and Consultation HESG | 36

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
They include an appropriate grievance mechanism	Choose an item.	Click here to enter text.	
10.3 Stakeholder Engagement			
	groups, or on the follo	wing topics, or through the following processes, with directly affected stakeholders:	
 Project preparation, on topics of interest and relevance to directly affected stakeholders 	Choose an item.	Click here to enter text.	
 The business interacts with a range of directly affected stakeholders to understand issues of interest to them 	Choose an item.	Click here to enter text.	
Environmental and social impact assessment and management planning	Choose an item.	Click here to enter text.	
Siting and design optimisation	Choose an item.	Click here to enter text.	
Project benefits	Choose an item.	Click here to enter text.	
Project-affected communities	Choose an item.	Click here to enter text.	
Resettlees and host communities	Choose an item.	Click here to enter text.	
 Assessment and planning for cultural heritage issues 	Choose an item.	Click here to enter text.	
 Assessment and planning for public health, including health officials 	Choose an item.	Click here to enter text.	
Downstream flow regimes	Choose an item.	Click here to enter text.	
Plans for the management of climate risks	Choose an item.	Click here to enter text.	
Engagement with directly affected stakeholders	Engagement with directly affected stakeholders has been appropriately timed:		
 Project preparation, on topics of interest and relevance to them 	Choose an item.	Click here to enter text.	
Environmental and social impact assessment and management planning	Choose an item.	Click here to enter text.	
Siting and design optimisation	Choose an item.	Click here to enter text.	
Project benefits	Choose an item.	Click here to enter text.	
Project-affected communities	Choose an item.	Click here to enter text.	
Resettlees and host communities	Choose an item.	Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
 Assessment and planning for cultural heritage issues 	Choose an item.	Click here to enter text.
 Assessment and planning for public health 	Choose an item.	Click here to enter text.
Downstream flow regimes	Choose an item.	Click here to enter text.
Engagement with directly affected stakeholders	has often been two-w	ay:
 Project preparation, on topics of interest and relevance to them 	Choose an item.	Click here to enter text.
 Environmental and social impact assessment and management planning 	Choose an item.	Click here to enter text.
Siting and design optimisation	Choose an item.	Click here to enter text.
 Project benefits 	Choose an item.	Click here to enter text.
 Project-affected communities 	Choose an item.	Click here to enter text.
 Resettlees and host communities 	Choose an item.	Click here to enter text.
 Assessment and planning for cultural heritage issues 	Choose an item.	Click here to enter text.
Assessment and planning for public health	Choose an item.	Click here to enter text.
Downstream flow regimes	Choose an item.	Click here to enter text.
Engagement is undertaken in good faith	Choose an item.	Click here to enter text.
Ongoing processes are in place for stakeholders to raise issues and get feedback	Choose an item.	Click here to enter text.
Ongoing processes are in place for:		
 Environmental and social impact assessment and management planning 	Choose an item.	Click here to enter text.
Siting and design optimisation	Choose an item.	Click here to enter text.
Project benefits	Choose an item.	Click here to enter text.
Project-affected communities	Choose an item.	Click here to enter text.
Resettlees and host communities	Choose an item.	Click here to enter text.
Employees and contractors on human resources and labour management issues	Choose an item.	Click here to enter text.
 Assessment and planning for cultural heritage issues 	Choose an item.	Click here to enter text.
Assessment and planning for public health	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
Downstream flow regimes	Choose an item.	Click here to enter text.	
Engagement with resettlees has been culturally appropriate	Choose an item.	Click here to enter text.	
Resettlees and host communities have been involved in the decision-making around relevant options and issues	Choose an item.	Click here to enter text.	
Public disclosure:			
 the business makes significant project reports publicly available 	Choose an item.	Click here to enter text.	
 the business publicly reports on project performance, in some sustainability areas 	Choose an item.	Click here to enter text.	
 results of the assessment of strategic fit are publicly disclosed 	Choose an item.	Click here to enter text.	
 power density calculations, estimated GHG emissions, and / or the results of a site-specific assessment have been publicly disclosed 	Choose an item.	Click here to enter text.	
10.4 Stakeholder Support			
Affected communities generally support or have no major ongoing opposition to the plans for the issues that specifically affect their community	Choose an item.	Click here to enter text.	
Resettlees and host communities generally support or have no major on-going opposition to the Resettlement Action Plan	Choose an item.	Click here to enter text.	
Directly affected stakeholder groups generally support or have no major ongoing opposition to the cultural heritage assessment, planning or implementation measures	Choose an item.	Click here to enter text.	
10.5 Conformance and Compliance	10.5 Conformance and Compliance		
Processes and objectives relating to communications and consultation have been and are on track to be met with:			

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
no major non-compliances	Choose an item.	Click here to enter text.
no major non-conformances	Choose an item.	Click here to enter text.
Any communications related commitments	Chaosa an itam	Clieb hard to enter tout
have been or are on track to be met	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1. • 2.

11 Hydrological Resource



Scope and Principle

This section addresses the hydrological resource availability and reliability to the project, reservoir planning and downstream flow regimes in relation to environmental, social and economic impacts and benefits. The principle is that the project's planned power generation takes into account hydrological resource availability and reliability in the short- and long-term, and that the reservoir and downstream flow regimes are planned and managed with an awareness of environmental, social and economic objectives.

Background		
Hydrology and flows		
Average flow at dam (m³/s)	Click here to enter text.	
Minimum monthly average flow (m³/s)	Click here to enter text.	
Maximum monthly average flow (m ³ /s)	Click here to enter text.	
Lowest observed flow (m³/s)	Click here to enter text.	
Highest observed flow (m³/s)	Click here to enter text.	
Design flow (m³/s)	Click here to enter text.	
Affected river reaches (start/end and how affected)	Click here to enter text.	
Proposed downstream flow regimes for environmental or social	Click here to enter text.	
objectives		
Reservoir		
Reservoir length (km)	Click here to enter text.	
Minimum operating level MOL (masl)	Click here to enter text.	
Normal operating level (masl)	Click here to enter text.	
Full supply level FSL (masl)	Click here to enter text.	
Reservoir area at FSL (km²)	Click here to enter text.	
Reservoir area at MOL (km²)	Click here to enter text.	
Volume at FSL (million m³)	Click here to enter text.	
Volume at MOL (million m³)	Click here to enter text.	
Average retention time in days	Click here to enter text.	
Number of days for filling	Click here to enter text.	
Other relevant information	Click here to enter text.	

11. Hydrological Resource HESG | 41

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations	
11.1 Assessment	11.1 Assessment		
Assessment of hydrological resource availability	Choose an item.	Click here to enter text.	
Hydrological resource assessment has been und	lertaken utilising:		
available data	Choose an item.	Click here to enter text.	
field measurements	Choose an item.	Click here to enter text.	
appropriate statistical indicators	Choose an item.	Click here to enter text.	
a hydrological model	Choose an item.	Click here to enter text.	
Issues which may impact on water availability or reliability have been identified and factored into the modelling	Choose an item.	Click here to enter text.	
Hydrological resource assessment includes evaluation of scenarios, uncertainties and risks	Choose an item.	Click here to enter text.	
Assessment of important considerations prior to and during reservoir filling	Choose an item.	Click here to enter text.	
Assessment of important considerations during reservoir operations	Choose an item.	Click here to enter text.	
Assessment of flow regimes downstream of project infrastructure	Choose an item.	Click here to enter text.	
Flow regimes assessment includes all potentially affected river reaches	Choose an item.	Click here to enter text.	
Flow regimes assessment includes identification of the flow ranges and variability to achieve different environmental, social and economic objectives	Choose an item.	Click here to enter text.	
Flow regimes assessment is based on relevant scientific and other information	Choose an item.	Click here to enter text.	
11.2 Management			

11. Hydrological Resource

Requirement	Requirement is met:	Findings and Observations
•	yes (❤) or no (※)	
Plans and processes for generation	Characa an itana	
operations have been developed to ensure efficiency of water use	Choose an item.	Click here to enter text.
Plans and processes for generation operations	are based on:	
analysis of the hydrological resource	are based on.	
availability	Choose an item.	Click here to enter text.
a range of technical considerations	Choose an item.	Click here to enter text.
 an understanding of power system opportunities and constraints 	Choose an item.	Click here to enter text.
 social and environmental considerations including downstream flow regimes 	Choose an item.	Click here to enter text.
Plans and processes to manage reservoir preparation and filling have been developed	Choose an item.	Click here to enter text.
Plans and processes to manage reservoir operations have been developed	Choose an item.	Click here to enter text.
Plans and processes for delivery of		
downstream flow regimes have been developed	Choose an item.	Click here to enter text.
Downstream flow plans include:		
flow objectives	Choose an item.	Click here to enter text.
 magnitude, range and variability of the flow regimes 	Choose an item.	Click here to enter text.
locations at which flows will be verified	Choose an item.	Click here to enter text.
ongoing monitoring	Choose an item.	Click here to enter text.
Downstream flow plans, where formal commitments have been made, are publicly disclosed	Choose an item.	Click here to enter text.
11.3 Outcomes		
Plans for downstream flows take into account environmental, social and economic objectives	Choose an item.	Click here to enter text.

11. Hydrological Resource

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
Where relevant, downstream flows take into account agreed transboundary objectives	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1. • 2.

11. Hydrological Resource HESG | 44

12 Climate Change Mitigation and Resilience



Scope and Principle

This section addresses the estimation and management of the project's greenhouse gas (GHG) emissions, analysis and management of the risks of climate change for the project, and the project's role in climate change adaptation. The principle is that the project's GHG emissions are consistent with low carbon power generation, the project is resilient to the effects of climate change, and the project contributes to wider adaptation to climate change.

Background	
Climate Change Mitigation	
Capacity (MW) (or additional capacity in case of expansion/	Click here to enter text.
rehabilitation projects)	
Average reservoir area (representing area of flooded land, net of	Click here to enter text.
pre-impoundment water body) (km²) (or additional reservoir area if	
any, for expansion/rehabilitation projects)	
Power density (W / m²)	Click here to enter text.
Emissions intensity (gCO₂e / kWh)	Click here to enter text.
National and regional policies, plans and commitments relevant to	Click here to enter text.
mitigation	
Climate Change Resilience	
Hydrological data available for the project site and the basin, and	Click here to enter text.
observed climate trends	
Regional and basin-level climate models relevant to the project	Click here to enter text.
location, if any	
Any climate change predictions for the project location, and degree	Click here to enter text.
of consistency	
National policies, plans and commitments relevant to adaptation and	Click here to enter text.
resilience	
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (�) or no (※)	Findings and Observations
12.1 Assessment		
Climate Change Mitigation		
For projects with a power density below 5 W/m ² , net GHG emissions (gCO ₂ e) of electricity generation have been estimated and independently verified	Choose an item.	Click here to enter text.
For projects with a power density below 5 W/m ² and estimated emissions are above 100 gCO ₂ e/kWh, a site-specific assessment of GHG emissions has been undertaken	Choose an item.	Click here to enter text.
An assessment of the project's fit with national and/or regional policies and plans on mitigation has been undertaken	Choose an item.	Click here to enter text.
Climate Change Resilience		
An assessment of the project's resilience to climate change has been undertaken	Choose an item.	Click here to enter text.
The assessment:		
incorporates an assessment of plausible climate change at the project site	Choose an item.	Click here to enter text.
 identifies a range of climatological and hydrological conditions at the project site 	Choose an item.	Click here to enter text.
applies these conditions in a documented risk assessment or stress test	Choose an item.	Click here to enter text.
The risk assessment or stress test encompasses		
dam safety	Choose an item.	Click here to enter text.
other infrastructural resilience	Choose an item.	Click here to enter text.
environmental and social risks	Choose an item.	Click here to enter text.
power generation availability	Choose an item.	Click here to enter text.
An assessment of the project's potential adaptation services and fit with national and/or regional policies and plans for adaptation has been undertaken	Choose an item.	Click here to enter text.

Requirement	Requirement is met:	Findings and Observations					
	yes (❤) or no (╳)	The state of the s					
12.2 Management							
Climate Change Mitigation							
If GHG emissions estimates assume design							
and management measures, there are plans	Choose an item.	Click here to enter text.					
to put these measures in place							
Climate Change Resilience							
The project design is based on plausible	Choose an item.	Click here to enter text.					
climate change scenarios	Choose an item.	Click field to effect text.					
Structural and operational measures are							
planned for design, implementation and	Choose an item.	Click here to enter text.					
operation phases to avoid or reduce the	Choose an item.	Click fiele to effice text.					
identified climate risks							
12.3 Outcomes	12.3 Outcomes						
Climate Change Mitigation							
The project's GHG emissions are							
demonstrated to be consistent with low	Choose an item.	Click here to enter text.					
carbon power generation							
The fit of the project with national and							
regional policies and plans for mitigation can	Choose an item.	Click here to enter text.					
be demonstrated							
Climate Change Resilience	Climate Change Resilience						
Plans will deliver a project that is resilient to	Choose an item.	Click here to enter text.					
climate change under a range of scenarios	CHOOSE AIT ILEITI.	CHERTICIC TO CHIEF TEXT.					
The fit of the project with national and							
regional policies and plans for adaptation can	Choose an item.	Click here to enter text.					
be demonstrated							

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

Appendix 1 – Interviews

Ref	Interviewee/s, Position	Organisation	Date	Location
1				
2				
3				
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19				

Appendix 1 – Interviews HESG | 49

Appendix 2 – Documents

Ref	Author	Year	Title	Notes / links / language
1				
2				
3				
4				
5				
6				
7				
8				
9				
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30				

Appendix 2 – Documents HESG | 50

Appendix 3 – Photographs

Photo 1: Click here to enter text.	Photo 2: Click here to enter text.	Photo 3: Click here to enter text.			
Photo 3: Click here to enter text.	Photo 5: Click here to enter text.	Photo 6: Click here to enter text.			



Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool

May 2022

Implementation Stage

Published by:

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Email: sustainability@hydropower.org

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Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool



About the HESG	The Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool (HESG) enables hydropower project proponents and investors to identify and address gaps against good international industry practice. The HESG is based on the assessment framework of the Hydropower Sustainability Assessment Protocol (HSAP) and draws from the definitions of good international industry practice of the Hydropower Sustainability Guidelines on Good International Industry Practice (HGIIP). Projects that meet the good practice requirements of the HESG are eligible for certification against the Hydropower Sustainability Standard following the Harmonisation with the Hydropower Sustainability Tools process.
Intended users and uses	The HESG includes three separate stage tools: Preparation, Implementation and Operation. These reflect the different stages of hydropower development and have been designed to be used as standalone documents. Each tool provides an action plan to help project teams address any gaps against good practice.
	Official HESG assessments are carried out by accredited assessors, who take an evidence-based approach. All findings are supported by objective evidence, which is factual, reproducible, objective and verifiable. The HESG is most effective when operators and developers commit to implement the recommendations provided and resolve identified significant gaps. In addition, the tool is aligned with the safeguards and standards of international financial institutions and can be used to attract climate-aligned investment.
	Hydropower development and operation may involve public entities, private companies or combined partnerships, and responsibilities may change as the project progresses through its life cycle. It is intended that the organisation with the primary responsibility for a project at its particular life-cycle stage will have a central role in any HESG assessment.
Structure of the tool	The HESG comprises 12 sections that cover the environmental, social, governance and climate change topics of the HSAP and HGIIP. A summary at the beginning of the report presents any significant gaps against basic good practice and outlines an action plan for improved performance. Within each section, requirements for good international industry practice are presented and project findings are provided. For each finding, a key indicates whether the requirement is met. A summary section analyses significant gaps and identifies each one with the symbol •.
Supporting resources	Additional guidance on the structure, content and history of the HESG can be found online at: www.hydrosustainability.org
Version date	May 2022

A. Assessment Details

Project sponsor	
Assessor(s)	
Assessment objective	
Assessment dates	
Assessment report date	
Prepared for	
Limitations of the	
assessment	

A. Assessment Details HESG | 55

B. Project Details

Project name	
Country	
Location	
Purpose	
Developer / Owner	
Financer(s)	
Installed capacity (MW)	
Construction start date (planned or actual)	
Commercial operations date (planned or actual)	
Annual average generation (GWh / year)	
Associated infrastructure: road(s) (length)	
Transmission lines and sub-stations (names, lengths and capacities)	
Total cost (USD m)	
Annual operating costs (USD m)	
Project development cost not including transmission (USD m)	
Transmission costs for project development (USD m)	
Specific investment cost (USD m / MW)	
Levelised energy cost (USD / kWh)	
Dam type	
Dam height (m)	
Dam length at crest (m)	
Units (number, type, MW)	
Reservoir area at Full Supply Level (FSL) (km²)	
Average net head at FSL (m)	
Average flow (m ³ / s)	
Design flow (m ³ / s)	
Load factor	
Number of physically displaced households	
Power density (W / m²)	
Emissions intensity (gCO₂e / kWh)	
Contacts / website	

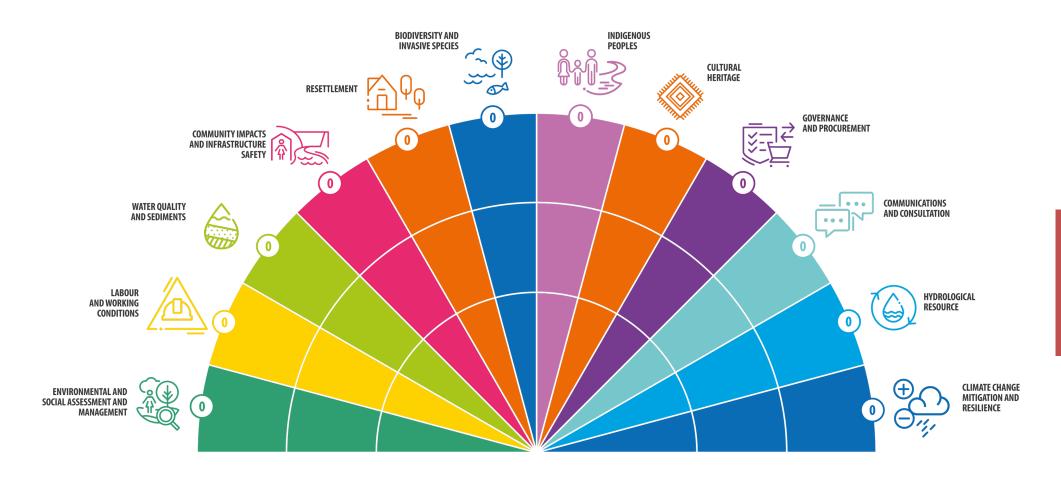
B. Project Details HESG | 56



Figure 1 – Map of dam site

B. Project Details HESG | 57

C. HESG Gap Analysis Diagram



C. HESG Gap Analysis Diagram HESG | 58

D. Significant gaps

						Sec	tions					
List of significant gaps:	Environmental and Social Assessment and Management	2. Labour and Working Conditions	3. Water Quality and Sediment	4. Community Impacts and Infrastructure Safety	5. Resettlement	6. Biodiversity and Invasive Species	7. Indigenous Peoples	8. Cultural Heritage	9. Governance and Procurement	10. Communications and Consultation	11. Hydrological Resource	12. Climate Change Mitigation and Resilience
1.												
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3.												
4.												
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6.												
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8.												
9.												
10.												
11.												
12.												
13.												
14.												
15.												
NUMBER OF SIGNIFICANT GAPS BY SECTION:												
TOTAL NUMBER OF SIGNIFICANT GAPS:												

D. Significant gaps
HESG | 59

E. Environmental and Social Action Plan (ESAP)

The follo	The following actions are recommended to address and resolve the significant gaps.								
				Indicator of	Timeframe				
Section	Significant gaps	Action(s)	Responsibility	achievement	<12 months	12-24 months	>24 months		
							<u> </u>		
							<u> </u>		

1 Environmental and Social Assessment and Management



Scope and Principle

This section addresses the plans and processes for environmental and social issues management. The principle is that negative environmental and social impacts, including waste, noise and air quality, associated with the hydropower facility are managed; avoidance, minimisation, mitigation, compensation and enhancement measures are implemented; and environmental and social commitments are fulfilled.

Background				
Identify the main environmental and social issues during	Click here to enter text.			
implementation				
Identify the main environmental and social issues during operation	Click here to enter text.			
Identify the environmental regulator	Click here to enter text.			
Identify other regulators (e.g. on land, water use, Indigenous	Click here to enter text.			
Peoples)				
Summarise the ESIA regulatory requirements	Click here to enter text.			
Volume of material needed for construction	Click here to enter text.			
Other relevant information	Click here to enter text.			

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations				
1.1 Assessment						
Environmental and social issues have been iden	tified through an asses	sment process:				
 relevant to project implementation 	Choose an item.	Click here to enter text.				
• relevant to project operation	Choose an item.	Click here to enter text.				
Assessments address:	Assessments address:					
 evaluation of associated facilities 	Choose an item.	Click here to enter text.				
 scoping of cumulative impacts 	Choose an item.	Click here to enter text.				
 role and capacity of third parties 	Choose an item.	Click here to enter text.				
• impacts associated with primary suppliers	Choose an item.	Click here to enter text.				
Waste, noise and air quality issues have been in	Waste, noise and air quality issues have been identified through an assessment process:					
 relevant to project implementation 	Choose an item.	Click here to enter text.				

Requirement	Requirement is met: yes (�) or no (※)	Findings and Observations	
relevant to project operation	Choose an item.	Click here to enter text.	
The assessments utilised appropriate expertise	for:		
environmental and social issues	Choose an item.	Click here to enter text.	
waste, noise and air quality	Choose an item.	Click here to enter text.	
Monitoring is being undertaken during the proje	ect implementation sta	ge appropriate to the following identified issues, for:	
 environmental and social issues 	Choose an item.	Click here to enter text.	
• waste, noise and air quality	Choose an item.	Click here to enter text.	
1.2 Management			
Processes are in place to ensure management of identified environmental and social issues	Choose an item.	Click here to enter text.	
Processes utilised appropriate expertise (internal and external)	Choose an item.	Click here to enter text.	
Processes are in place to meet environmental and social commitments relevant to project implementation stage	Choose an item.	Click here to enter text.	
Processes are in place to ensure management of identified waste, noise and air quality, and to meet commitments, relevant to project implementation stage	Choose an item.	Click here to enter text.	
Plans are in place for the operation stage for ongoing environmental and social issues management	Choose an item.	Click here to enter text.	
The environmental and social impact assessment and key associated management plans are publicly disclosed	Choose an item.	Click here to enter text.	
Plans are in place for the operation stage for ongoing waste management	Choose an item.	Click here to enter text.	
1.3 Conformance and Compliance			
Processes and objectives to manage each of the	Processes and objectives to manage each of the following have been and are on track to be met:		
environmental and social management, with no major non-compliances	Choose an item.	Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
environmental and social management, with no major non-conformances	Choose an item.	Click here to enter text.
 waste, noise and air quality, with no major non-compliances 	Choose an item.	Click here to enter text.
 waste, noise and air quality, with no major non-conformances 	Choose an item.	Click here to enter text.
Environmental and social commitments have been or are on track to be met	Choose an item.	Click here to enter text.
Environmental and social funding commitments have been or are on track to be met	Choose an item.	Click here to enter text.
Any waste, noise and air quality-related commitments have been or are on track to be met	Choose an item.	Click here to enter text.
1.4 Outcomes		
Negative environmental and social impacts of the project are avoided, minimised and mitigated with no significant gaps	Choose an item.	Click here to enter text.
The project or the corporate entity to which it belongs can pay for social and environmental plans and commitments	Choose an item.	Click here to enter text.
Negative noise and air quality impacts arising from project activities are avoided, minimised and mitigated with no significant gaps	Choose an item.	Click here to enter text.
Project wastes managed responsibly	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

2 Labour and Working Conditions



Scope and Principle

This section addresses labour and working conditions, including employee and contractor opportunity, equity, diversity, health and safety. The principle is that workers are treated fairly and protected.

Background	
Labour requirements during implementation (full-time equivalent)	Click here to enter text.
Labour requirements during operation (full-time equivalent)	Click here to enter text.
Applicable key human resources regulations	Click here to enter text.
Applicable key occupational health and safety (OH&S) regulations	Click here to enter text.
Identify the regulator for labour law and OH&S	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
2.1 Assessment		
Human resources and labour management requirements have been identified through an assessment process	Choose an item.	Click here to enter text.
The assessment included occupational health and safety issues and risks	Choose an item.	Click here to enter text.
Processes are in place to identify any emerging or ongoing issues	Choose an item.	Click here to enter text.
Processes are in place to monitor if management measures are effective	Choose an item.	Click here to enter text.
2.2 Management		
Human resource and labour management policies, plans and processes are in place that address all labour management planning components	Choose an item.	Click here to enter text.

2. Labour and Working Conditions HESG |65

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
Human resource and labour management policies, plans and processes of contractors, subcontractors and intermediaries are in place	Choose an item.	Click here to enter text.
2.3 Conformance and Compliance		
Processes and objectives relating to human reso	ource and labour mana	gement have been and are on track to be met with:
• no major non-compliances	Choose an item.	Click here to enter text.
• no major non-conformances	Choose an item.	Click here to enter text.
Any labour related commitments have been or are on track to be met	Choose an item.	Click here to enter text.
2.4 Outcomes		
There are no identified inconsistencies of labour management policies, plans and practices with internationally recognised labour rights	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

2. Labour and Working Conditions HESG | 66

3 Water Quality and Sediments



Scope and Principle

This section addresses the management of water quality, erosion and sedimentation issues associated with the project. The principle is that water quality in the vicinity of the project is not adversely impacted by project activities, that erosion and sedimentation caused by the project are managed responsibly and do not present problems with respect to other social, environmental and economic objectives, and that commitments to address water quality, erosion and sedimentation issues are fulfilled.

Background		
Water Quality		
Description of water quality	Click here to enter text.	
Key water quality issues	Click here to enter text.	
Main influences on water quality	Click here to enter text.	
Sedimentology		
Key sediment issues	Click here to enter text.	
Sediment load (tonnes/year)	Click here to enter text.	
Catchment area at the dam	Click here to enter text.	
Other information	Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations	
3.1 Assessment			
The following issues have been identified throu	The following issues have been identified through an assessment process:		
 water quality issues relevant to project implementation 	Choose an item.	Click here to enter text.	
 water quality issues relevant to project operation 	Choose an item.	Click here to enter text.	
 erosion and sedimentation issues relevant to project implementation 	Choose an item.	Click here to enter text.	
 erosion and sedimentation issues relevant to project operation 	Choose an item.	Click here to enter text.	

3. Water Quality and Sediments

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations	
The above processes utilised appropriate exper	The above processes utilised appropriate expertise for:		
water quality	Choose an item.	Click here to enter text.	
erosion and sedimentation	Choose an item.	Click here to enter text.	
Monitoring is being undertaken during the projection	ect implementation sta	ge appropriate to the following identified issues:	
• water quality	Choose an item.	Click here to enter text.	
• erosion and sedimentation	Choose an item.	Click here to enter text.	
3.2 Management			
Processes are in place to ensure management of identified water quality issues, and to meet commitments, relevant to the project implementation stage	Choose an item.	Click here to enter text.	
Plans are in place for the operation stage for ongoing water quality issues management	Choose an item.	Click here to enter text.	
Processes are in place to ensure management of identified erosion and sedimentation issues, and to meet commitments, relevant to the project implementation stage	Choose an item.	Click here to enter text.	
Plans are in place for the operation stage for ongoing erosion and sedimentation issues management	Choose an item.	Click here to enter text.	
3.3 Conformance and Compliance			
Processes and objectives in place to manage ea	ch of the following hav	e been and are on track to be met:	
 water quality, with no major non- compliances 	Choose an item.	Click here to enter text.	
 water quality, with no major non- conformances 	Choose an item.	Click here to enter text.	
 erosion and sedimentation, with no major non-compliances 	Choose an item.	Click here to enter text.	
erosion and sedimentation, with no major non-conformances	Choose an item.	Click here to enter text.	
Commitments relating to the following have been or are on track to be met:			

3. Water Quality and Sediments HESG | 68

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
• water quality	Choose an item.	Click here to enter text.
 erosion and sedimentation 	Choose an item.	Click here to enter text.
3.4 Outcomes		
Negative water quality impacts arising from project implementation are avoided, minimised and mitigated	Choose an item.	Click here to enter text.
Erosion and sedimentation issues during project implementation are avoided, minimised and mitigated	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	● 2.

3. Water Quality and Sediments

4 Community Impacts and Infrastructure Safety



Scope and Principle

This section addresses impacts of the project on project-affected communities, including economic displacement, impacts on livelihoods and living standards, public health impacts, impacts to rights, risks and opportunities of those affected by the project, infrastructure safety risks and additional benefits that can arise from a hydropower project. The principle is that livelihoods and living standards impacted by the project are improved relative to pre-project conditions for project-affected communities, that commitments to project-affected communities are fully delivered, and that life, property and community assets and resources are protected from the consequences of dam failure and other infrastructure safety risks. This section does not address requirements that relate to physical displacement or to Indigenous Peoples, which are addressed in Section 5 and 7. Other interested parties and groups are addressed in Section 10.

Background		
Community Impacts and Benefits		
Description of project-affected communities and how they are	Click here to enter text.	
affected (distinguish between directly affected vs economically		
displaced vs other affected communities and include number of		
people and households)		
Agencies relevant to land acquisition	Click here to enter text.	
Agencies relevant to livelihood restoration and project benefits	Click here to enter text.	
Infrastructure Safety and Public Health		
Type of dam	Click here to enter text.	
Dam height (m)	Click here to enter text.	
Probable maximum flood (m³/s)	Click here to enter text.	
Design flood (expressed as estimated flood with return period)	Click here to enter text.	
Spillway capacity (m³ / sc)	Click here to enter text.	
Spillway height (masl)	Click here to enter text.	
Headrace length (m)	Click here to enter text.	
Headrace width (m)	Click here to enter text.	
Headrace capacity (m ³ / s)	Click here to enter text.	
Seismicity	Click here to enter text.	
Geology	Click here to enter text.	
Dam safety regulatory authorities	Click here to enter text.	
Local presence/capacity of emergency services	Click here to enter text.	
Potential safety risks in this context	Click here to enter text.	

Degree of risk of dam failure and in what way	Click here to enter text.
Population at risk of dam break (locations, numbers)	Click here to enter text.
Dam safety standards followed	Click here to enter text.
Agencies relevant to dam safety	Click here to enter text.
Other infrastructure safety issues	Click here to enter text.
Description of key public health issues	Click here to enter text.
Agencies relevant to public health	Click here to enter text.

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations		
4.1 Assessment				
Community Impacts and Benefits				
Issues relating to project-affected communities have been identified through an assessment process	Choose an item.	Click here to enter text.		
This assessment utilised local knowledge	Choose an item.	Click here to enter text.		
Monitoring of project impacts and effectiveness of management measures is being undertaken during project implementation appropriate to the identified issues	Choose an item.	Click here to enter text.		
Opportunities to increase the development contribution of the project through additional benefits and/or benefit sharing have been assessed	Choose an item.	Click here to enter text.		
In the case that commitments to additional benefits or benefit sharing have been made, monitoring is being undertaken on delivery of these commitments	Choose an item.	Click here to enter text.		
Infrastructure Safety and Public Health				
Dam and other infrastructure safety risks relevant to project implementation have been identified through an assessment process	Choose an item.	Click here to enter text.		

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
Dam and other infrastructure safety risks relevant to project operation have been identified through an assessment process	Choose an item.	Click here to enter text.	
Safety monitoring is being undertaken during the project implementation stage appropriate to the identified issues	Choose an item.	Click here to enter text.	
Public health issues relevant to project implementation have been identified through	Choose an item.	Click here to enter text.	
an assessment process Public health issues relevant to project operation have been identified through an assessment process	Choose an item.	Click here to enter text.	
The public health assessment processes utilised appropriate expertise	Choose an item.	Click here to enter text.	
Monitoring is being undertaken during the project implementation stage appropriate to the identified public health issues	Choose an item.	Click here to enter text.	
4.2 Management			
Community Impacts and Benefits			
Measures are in place to address identified issues that affect project-affected communities and meet commitments made to address these issues	Choose an item.	Click here to enter text.	
If there are any formal agreements with project-affected communities these are publicly disclosed	Choose an item.	Click here to enter text.	
Measures are in place to deliver commitments by the project to additional benefits or benefit sharing	Choose an item.	Click here to enter text.	
Commitments to project benefits are publicly disclosed	Choose an item.	Click here to enter text.	

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
Infrastructure Safety and Public Health		
Processes are in place to address identified dam and other infrastructure safety issues, and to meet any safety related commitments, relevant to the project implementation stage	Choose an item.	Click here to enter text.
Processes include communication of public safety measures	Choose an item.	Click here to enter text.
A formal quality control programme is in place for construction	Choose an item.	Click here to enter text.
Safety management plans for the operation stage have been developed	Choose an item.	Click here to enter text.
These plans have been developed in conjunction with relevant regulatory and local authorities	Choose an item.	Click here to enter text.
Emergency response plans include awareness and training programmes and emergency response simulations	Choose an item.	Click here to enter text.
Processes are in place to ensure management of identified public health issues, and to meet commitments, relevant to the project implementation stage	Choose an item.	Click here to enter text.
Plans are in place for the operation stage for ongoing public health issues management	Choose an item.	Click here to enter text.
These plans include hand-over to local authorities as appropriate	Choose an item.	Click here to enter text.
4.3 Conformance and Compliance		
Community Impacts and Benefits		
Processes and objectives in place to manage the following have been and are on track to be met:		
 project-affected communities' issues, with no major non-compliances 	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
• project-affected communities' issues, with no major non-conformances	Choose an item.	Click here to enter text.
 project benefits, with no major non- compliances 	Choose an item.	Click here to enter text.
 project benefits, with no major non- conformances 	Choose an item.	Click here to enter text.
Commitments have been or are on track to be r	net relating to:	
project-affected communities	Choose an item.	Click here to enter text.
project benefits	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
Processes and objectives in place to manage the	e following have been a	and are on track to be met:
dam and other infrastructure safety, with no major non-compliances	Choose an item.	Click here to enter text.
dam and other infrastructure safety, with no major non-conformances	Choose an item.	Click here to enter text.
public health issues, with no major non- compliances	Choose an item.	Click here to enter text.
public health issues, with no major non- conformances	Choose an item.	Click here to enter text.
Commitments have been or are on track to be r	net relating to:	
dam and other infrastructure safety	Choose an item.	Click here to enter text.
public health	Choose an item.	Click here to enter text.
4.4 Outcomes		
Community Impacts and Benefits		
Livelihoods and living standards impacted by the project have been or are on track to be improved	Choose an item.	Click here to enter text.
Economic displacement is fairly compensated, preferably through provision of comparable goods, property or services	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
Communities directly affected by the development of the hydropower project have received or are on track to receive benefits	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
Safety risks have been avoided, minimised and mitigated with no significant gaps	Choose an item.	Click here to enter text.
Negative public health impacts arising from project activities are avoided, minimised and mitigated	Choose an item.	Click here to enter text.

Summary of Findings

Sı	ummary and other notable issues	List of significant gaps
C	lick here to enter text.	• 1. • 2.

5 Resettlement



Scope and Principle

This section addresses physical displacement arising from the hydropower project development. The principle is that the dignity and human rights of those physically displaced are respected; that these matters are dealt with in a fair and equitable manner; that livelihoods and standards of living for resettles and host communities are improved; and that commitments made to resettlees are fully delivered. This section does not address those that are only economically displaced, who are addressed in Section 4.

Background		
Does the project require or result in any physical displacement of people? Please state the evidence on which this determination is made.		
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant	Click here to enter text.	
Description of physically displaced communities and how they are	Click here to enter text.	
displaced (distinguish between permanently vs temporarily and		
include number of people and households)		
Name and number of settlements	Click here to enter text.	
Agencies relevant to land acquisition	Click here to enter text.	
Agencies relevant to livelihood restoration	Click here to enter text.	
Other relevant information	Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
5.1 Assessment		
An assessment of the resettlement implications of the project has been undertaken	Choose an item.	Click here to enter text.
This assessment establishes the pre-project socio-economic baseline for resettlees and host communities	Choose an item.	Click here to enter text.

5. Resettlement HESG | 76

Requirement	Requirement is met:	Findings and Observations
Nanitaring is being undertaken of	yes (�/) or no (淡)	
Monitoring is being undertaken of implementation of the resettlement plans, and to see if commitments made to resettlees and host communities have been delivered and are effective and to identify any ongoing or emerging issues	Choose an item.	Click here to enter text.
5.2 Management		
Measures to address resettlement are documented in a Resettlement Action Plan	Choose an item.	Click here to enter text.
Measures are in place to deliver commitments to resettlees and host communities	Choose an item.	Click here to enter text.
Measures are in place to manage any issues relating to resettlement, including provision of grievance mechanisms	Choose an item.	Click here to enter text.
Formal agreements with resettlees and host communities are publicly disclosed	Choose an item.	Click here to enter text.
5.3 Conformance and Compliance		
Processes and objectives in the Resettlement A	ction Plan have been a	nd are on track to be met with:
no major non-compliances	Choose an item.	Click here to enter text.
no major non-conformances	Choose an item.	Click here to enter text.
Any resettlement related commitments have been or are on track to be met	Choose an item.	Click here to enter text.
5.4 Outcomes		
Resettlement has been and is being treated in a fair and equitable manner	Choose an item.	Click here to enter text.
Resettlees and host communities have experienced or are on track to experience a timely improvement in livelihoods and living standards relative to the pre-project baseline	Choose an item.	Click here to enter text.

5. Resettlement HESG | 77

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
CHOK HOTO to CHOCK TOXIC	• 2.

5. Resettlement HESG | 78

6 Biodiversity and Invasive Species



Scope and Principle

This section addresses ecosystem values, habitat and specific issues such as threatened species and fish passage in the catchment, reservoir and downstream areas, as well as potential impacts arising from pest and invasive species associated with the planned project. The principle is that there are healthy, functional and viable aquatic and terrestrial ecosystems in the project-affected area that are sustainable over the long-term, that biodiversity impacts arising from project activities are managed responsibly, and that commitments to implement biodiversity and invasive species measures are fulfilled.

Background	
Short description of the ecological region in the project area	Click here to enter text.
Protected areas (national parks and reserves etc) and their distance	Click here to enter text.
from the project	
Critical habitats in the project area, including important bird areas,	Click here to enter text.
hotspots of endemism etc.	
# threatened species in the directly affected area: terrestrial	Click here to enter text.
# threatened species: aquatic	Click here to enter text.
Any other species of conservation importance	Click here to enter text.
Migratory pathways	Click here to enter text.
Invasive species: terrestrial	Click here to enter text.
Invasive species: aquatic	Click here to enter text.
Key threats to biodiversity	Click here to enter text.
Agencies involved in biodiversity conservation	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
6.1 Assessment		
Biodiversity issues relevant to project implementation have been identified through an assessment process	Choose an item.	Click here to enter text.

6. Biodiversity and Invasive Species HESG | 79

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
Biodiversity issues relevant to project operation have been identified through an assessment process	Choose an item.	Click here to enter text.
The above assessments utilised appropriate expertise	Choose an item.	Click here to enter text.
Monitoring is being undertaken during the project implementation stage appropriate to the identified issues	Choose an item.	Click here to enter text.
6.2 Management		
Processes are in place to ensure management of identified biodiversity issues, and to meet commitments, relevant to the project implementation stage	Choose an item.	Click here to enter text.
Plans are in place for the operation stage for ongoing biodiversity issues management	Choose an item.	Click here to enter text.
6.3 Conformance and Compliance		
Processes and objectives in place to manage bid	odiversity issues have b	een and are on track to be met with:
no major non-compliances	Choose an item.	Click here to enter text.
no major non-conformances	Choose an item.	Click here to enter text.
Biodiversity related commitments have been or are on track to be met	Choose an item.	Click here to enter text.
6.4 Outcomes		
Negative biodiversity impacts arising from project activities are avoided, minimised, mitigated and compensated with no significant gaps	Choose an item.	Click here to enter text.

6. Biodiversity and Invasive Species HESG | 80

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

6. Biodiversity and Invasive Species HESG |81

7 Indigenous Peoples



Scope and Principle

This section addresses the rights at risk and opportunities of Indigenous Peoples with respect to the project, recognising that as social groups with identities distinct from dominant groups in national societies, they are often the most marginalised and vulnerable segments of the population. The principle is that the project respects the dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resource-based livelihoods of Indigenous Peoples in an ongoing manner throughout the project life.

Background		
Are any of the affected people Indigenous Peoples? Please state the evidence on which this determination is made.		
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant	Click here to enter text.	

	Add columns for each Indigenous People
Brief description of the peoples and their culture, lands, and	Click here to enter text.
representation	
Directly affected communities and how they are affected	Click here to enter text.
Other affected indigenous communities	Click here to enter text.
# households physically displaced	Click here to enter text.
# households economically displaced	Click here to enter text.

Agencies relevant to Indigenous Peoples	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no 🂢	Findings and Observations
7.1 Assessment		
Issues that may affect Indigenous Peoples' rights in relation to the project have been identified through an assessment process	Choose an item.	Click here to enter text.

7. Indigenous Peoples HESG |82

Requirement	Requirement is met: yes (�) or no 🎇	Findings and Observations
This process utilised local knowledge and expertise	Choose an item.	Click here to enter text.
Monitoring of project impacts and effectiveness of management measures is being undertaken during project implementation appropriate to the identified rights at risk	Choose an item.	Click here to enter text.
7.2 Management		
Measures are in place to address the Indigenous Peoples' rights at risk in relation to the project	Choose an item.	Click here to enter text.
Formal commitments are publicly disclosed	Choose an item.	Click here to enter text.
7.3 Stakeholder Engagement		
Channels of communication with Indigenous Peoples are maintained	Choose an item.	Click here to enter text.
These channels are:		
appropriately timed	Choose an item.	Click here to enter text.
culturally appropriate	Choose an item.	Click here to enter text.
• two-way	Choose an item.	Click here to enter text.
Ongoing processes are in place for Indigenous Peoples to raise issues and get feedback	Choose an item.	Click here to enter text.
A mutually-agreed disputes procedure is in place	Choose an item.	Click here to enter text.
7.4 Stakeholder Support		
Free, Prior and Informed Consent has been achieved with respect to the Indigenous Peoples' rights at risk following the principle of proportionality	Choose an item.	Click here to enter text.
7.5 Conformance and Compliance		

7. Indigenous Peoples HESG |83

Requirement	Requirement is met: yes (❤) or no 🂢	Findings and Observations	
Processes and objectives relating to Indigenous	Processes and objectives relating to Indigenous Peoples' rights at risk have been and are on track to be met with:		
• no major non-compliances	Choose an item.	Click here to enter text.	
• no major non-conformances	Choose an item.	Click here to enter text.	
Any Indigenous Peoples related commitments have been or are on track to be met	Choose an item.	Click here to enter text.	
7.6 Outcomes			
Plans provide for negative impacts of the project to Indigenous Peoples' rights to be avoided, minimised, mitigated or compensated with no significant gaps	Choose an item.	Click here to enter text.	
Plans provide some practicable opportunities for positive impacts to be achieved	Choose an item.	Click here to enter text.	

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

7. Indigenous Peoples HESG |84

8 Cultural Heritage



Scope and Principle

This section addresses cultural heritage, with specific reference to physical cultural resources, associated with the hydropower facility. The principle is that physical cultural resources are identified, their importance is understood, and measures are in place to address those identified to be of high importance. This section does not address non-physical cultural resources, which are addressed in Section 1 and/or in Sections 5 and 7 when relevant.

Background		
Does the project affect any physical cultural resources? Please state the evidence on which this determination is made.		
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant	Click here to enter text.	
Sites of physical cultural heritage affected by or in proximity to the	How they are affected	
project-affected areas		
Click here to enter text.	Click here to enter text.	
Agencies responsible for cultural heritage	Click here to enter text.	
Other important local or regional cultural heritage values and issues	Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (☆)	Findings and Observations
8.1 Assessment		
Cultural heritage issues, with respect to physical cultural resources, that are relevant to project implementation have been identified through an assessment process	Choose an item.	Click here to enter text.
Cultural heritage issues, with respect to physical cultural resources, that are relevant to project operation have been identified through an assessment process	Choose an item.	Click here to enter text.
The assessments utilised appropriate expertise	Choose an item.	Click here to enter text.

8. Cultural Heritage HESG | 85

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
Monitoring is being undertaken during the project implementation stage appropriate to the identified issues	Choose an item.	Click here to enter text.	
8.2 Management			
Processes are in place to ensure management of identified cultural heritage issues, and to meet commitments, relevant to the project implementation stage	Choose an item.	Click here to enter text.	
Plans are in place for the operation stage for ongoing cultural heritage issues management	Choose an item.	Click here to enter text.	
8.3 Conformance and Compliance			
Processes and objectives in place to manage cu	Itural heritage issues ha	ave been and are on track to be met with:	
no major non-compliances	Choose an item.	Click here to enter text.	
no major non-conformances	Choose an item.	Click here to enter text.	
Cultural heritage related commitments have been or are on track to be met	Choose an item.	Click here to enter text.	
8.4 Outcomes			
Negative cultural heritage impacts arising from project implementation are avoided, minimised, mitigated and compensated with no significant gaps	Choose an item.	Click here to enter text.	

8. Cultural Heritage HESG | 86

Summary of Findings

Summary and other notable issues	List of significant gaps
Choose an item.	• 1.
	• 2.

8. Cultural Heritage HESG | 87

9 Governance and Procurement



Scope and Principle

This section addresses corporate and external governance considerations for the operating hydropower facility, and all project-related procurement including works, goods and services. The principle is that the developer has sound corporate business structures, policies and practices, and that procurement processes are equitable, transparent and accountable.

Background	
Key information on political context and public sector risks	Click here to enter text.
Key information on corporate ownership and governance	Click here to enter text.
Details of the concession, if applicable	Click here to enter text.
Key licenses or permits	Click here to enter text.
Key information on expected procurement strategy for this project	Click here to enter text.
(EPC, BOOT, etc)	
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
9.1 Assessment		
Processes are in place to identify:		
 ongoing or emerging political and public sector governance issues 	Choose an item.	Click here to enter text.
 ongoing or emerging corporate governance requirements and issues 	Choose an item.	Click here to enter text.
 major supply needs, supply sources, relevant legislation and guidelines, supply chain risks and corruption risks 	Choose an item.	Click here to enter text.
Processes are in place to monitor if corporate governance measures are effective	Choose an item.	Click here to enter text.
Ongoing monitoring is being undertaken to monitor effectiveness of procurement plans and processes	Choose an item.	Click here to enter text.

9. Governance and Procurement HESG | 88

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
9.2 Management			
Processes are in place to manage:			
corporate, political and public sector risks	Choose an item.	Click here to enter text.	
compliance	Choose an item.	Click here to enter text.	
 social and environmental responsibility 	Choose an item.	Click here to enter text.	
 procurement of goods and services 	Choose an item.	Click here to enter text.	
grievance mechanisms	Choose an item.	Click here to enter text.	
 ethical business practices 	Choose an item.	Click here to enter text.	
transparency	Choose an item.	Click here to enter text.	
Policies and processes are communicated internally and externally as appropriate	Choose an item.	Click here to enter text.	
Independent review mechanisms are utilised to address sustainability issues in cases of project capacity shortfalls, high sensitivity of particular issues, or the need for enhanced credibility	Choose an item.	Click here to enter text.	
Measures are in place to guide procurement of project goods, works and services and address identified issues or risks, and to meet procurement related commitments	Choose an item.	Click here to enter text.	
9.3 Conformance and Compliance	9.3 Conformance and Compliance		
The project has no major non-compliances relating to governance	Choose an item.	Click here to enter text.	
Processes and objectives relating to procurement have been and are on track to be met with:			
no major non-compliances	Choose an item.	Click here to enter text.	
no major non-conformances	Choose an item.	Click here to enter text.	
Any procurement related commitments have been or are on track to be met	Choose an item.	Click here to enter text.	
9.4 Outcomes			

9. Governance and Procurement HESG |89

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
There are no significant unresolved corporate and external governance issues identified	Choose an item.	Click here to enter text.
Procurement of works, goods and services acro	ss major project compo	onents is:
equitable	Choose an item.	Click here to enter text.
efficient	Choose an item.	Click here to enter text.
transparent	Choose an item.	Click here to enter text.
accountable	Choose an item.	Click here to enter text.
• ethical	Choose an item.	Click here to enter text.
• timely	Choose an item.	Click here to enter text.
Contracts are progressing or have been		
concluded within budget or changes on contracts are clearly justifiable	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1. • 2.

9. Governance and Procurement HESG | 90

10 Communications and Consultation



Scope and Principle

This section addresses ongoing engagement with project stakeholders, both within the company as well as between the company and external stakeholders (e.g. affected communities, governments, key institutions, partners, contractors, catchment residents, etc). The principle is that stakeholders are identified and engaged in the issues of interest to them, and communication and consultation processes maintain good stakeholder relations throughout the project life. Communications and consultation requirements unique to Indigenous Peoples are found in Section 7.

Background	
Directly affected community-level stakeholders Click here to enter text.	
Directly affected institutional-level stakeholders Click here to enter text.	
Other relevant information Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (⊗)	Findings and Observations
10.1 Assessment		
Communications and consultation requirements and approaches have been identified through an assessment process	Choose an item.	Click here to enter text.
The assessment process involved stakeholder mapping	Choose an item.	Click here to enter text.
The assessment process was supported by ongoing monitoring	Choose an item.	Click here to enter text.
10.2 Management		
Communications and consultation plans and processes are in place to manage communications and engagement with stakeholders	Choose an item.	Click here to enter text.
These outline communication and consultation needs and approaches for various stakeholder groups and topics	Choose an item.	Click here to enter text.

10. Communications and Consultation HESG |91

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
Plans and processes that are in place include an appropriate grievance mechanism	Choose an item.	Click here to enter text.
10.3 Stakeholder Engagement		
The project implementation stage involves engagement with directly affected stakeholders	Choose an item.	Click here to enter text.
Engagement is:		
 appropriately timed and scoped 	Choose an item.	Click here to enter text.
often two-way	Choose an item.	Click here to enter text.
 undertaken in good faith 	Choose an item.	Click here to enter text.
The business interacts with a range of directly affected stakeholders to understand issues of interest to them	Choose an item.	Click here to enter text.
Ongoing processes are in place for stakeholders to raise issues and get feedback	Choose an item.	Click here to enter text.
Ongoing processes are in place for:		
 environmental and social issues 	Choose an item.	Click here to enter text.
 project-affected communities 	Choose an item.	Click here to enter text.
 resettlees and host communities 	Choose an item.	Click here to enter text.
 employees and contractors to raise human resources and labour management issues 	Choose an item.	Click here to enter text.
 management of climate risks 	Choose an item.	Click here to enter text.
Public disclosure:		
 the business makes significant project reports publicly available 	Choose an item.	Click here to enter text.
 the business publicly reports on project performance, in some sustainability areas 	Choose an item.	Click here to enter text.
 power density calculations, estimated GHG emissions, and / or the results of a site-specific assessment have been publicly disclosed 	Choose an item.	Click here to enter text.

10. Communications and Consultation HESG |92

Requirement	Requirement is met: yes (�) or no (※)	Findings and Observations
10.4 Stakeholder Support		
Affected communities generally support or		
have no major ongoing opposition to the	Choose an item.	Click here to enter text.
plans for the issues that specifically affect	Choose an item.	Click here to enter text.
their community		
Resettlees and host communities generally		
support or have no major on-going opposition	Choose an item.	Click here to enter text.
to the Resettlement Action Plan		
There is general support or no major ongoing		
opposition amongst directly affected		
stakeholder groups for the cultural heritage	Choose an item.	Click here to enter text.
assessment, planning or implementation		
measures		
10.5 Conformance and Compliance		
Processes and objectives relating to communications and consultation have been and are on track to be met with:		
• no major non-compliances	Choose an item.	Click here to enter text.
• no major non-conformances	Choose an item.	Click here to enter text.
Communications related commitments have been or are on track to be met	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

10. Communications and Consultation HESG |93

11 Hydrological Resource



Scope and Principle

This section addresses the management of environmental, social and economic issues within the reservoir area and downstream flow regimes during project implementation, as well as planning for reservoir management for the operating hydropower facility. The principle is that the reservoir and downstream flow regimes are planned and managed with an awareness of environmental, social and economic objectives.

Background		
Hydrology and flows		
Average flow at dam (m ³ / s)	Click here to enter text.	
Minimum monthly average flow (m ³ / s)	Click here to enter text.	
Maximum monthly average flow (m ³ / s)	Click here to enter text.	
Lowest observed flow (m³/s)	Click here to enter text.	
Highest observed flow (m ³ / s)	Click here to enter text.	
Design flow (m ³ / s)	Click here to enter text.	
Affected river reaches (start/end and how affected)	Click here to enter text.	
Proposed downstream flow regimes for environmental or social	Click here to enter text.	
objectives		
Reservoir		
Reservoir length (km)	Click here to enter text.	
Minimum operating level MOL (masl)	Click here to enter text.	
Normal operating level (masl)	Click here to enter text.	
Full supply level FSL (masl)	Click here to enter text.	
Reservoir area at FSL (km²)	Click here to enter text.	
Reservoir area at MOL (km²)	Click here to enter text.	
Volume at FSL (million m³)	Click here to enter text.	
Volume at MOL (million m³)	Click here to enter text.	
Average retention time in days	Click here to enter text.	
Number of days for filling	Click here to enter text.	
Other relevant information	Click here to enter text.	

11. Hydrological Resource HESG | 94

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
11.1 Assessment		
The following issues have been identified through	gh an assessment proc	ess:
 the important considerations prior to and during reservoir filling 	Choose an item.	Click here to enter text.
• the important considerations during reservoir operations	Choose an item.	Click here to enter text.
• issues in relation to flow regimes downstream of project infrastructure during the project implementation stage	Choose an item.	Click here to enter text.
Monitoring is being undertaken during the proje	ect implementation sta	ge appropriate to the following identified issues:
reservoir preparation and filling	Choose an item.	Click here to enter text.
 effectiveness of flow management measures or any emerging downstream flow issues during project implementation 	Choose an item.	Click here to enter text.
11.2 Management		
Measures are in place to address identified needs during reservoir preparation and filling	Choose an item.	Click here to enter text.
Plans are in place to manage the reservoir and any associated issues for the operating hydropower facility	Choose an item.	Click here to enter text.
Measures are in place to manage identified downstream flow issues	Choose an item.	Click here to enter text.
Where formal downstream flow commitments have been made, these are publicly disclosed	Choose an item.	Click here to enter text.
11.3 Conformance and Compliance		
Processes and objectives in place to manage ea	ch of the following hav	e been and are on track to be met:
 reservoir management, with no major non- compliances 	Choose an item.	Click here to enter text.

11. Hydrological Resource

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
 reservoir management, with no major non- conformances 	Choose an item.	Click here to enter text.
 downstream flow regimes, with no major non-compliances 	Choose an item.	Click here to enter text.
 downstream flow regimes, with no major non-conformances 	Choose an item.	Click here to enter text.
Commitments relating to the following have be	en or are on track to be	e met:
reservoir management	Choose an item.	Click here to enter text.
downstream flow regimes	Choose an item.	Click here to enter text.
11.4 Outcomes		
Downstream flow regimes take into account environmental, social and economic objectives	Choose an item.	Click here to enter text.
Where relevant, they also take into account agreed transboundary objectives	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

11. Hydrological Resource

12 Climate Change Mitigation and Resilience



Scope and Principle

This section addresses the estimation and management of the project's greenhouse gas (GHG) emissions, analysis and management of the risks of climate change for the project, and the project's role in climate change adaptation. The principle is that the project's GHG emissions are consistent with low carbon power generation, the project is resilient to the effects of climate change, and the project contributes to wider adaptation to climate change.

Background		
Climate Change Mitigation		
Capacity (MW) (or additional capacity in case of expansion/	Click here to enter text.	
rehabilitation projects)		
Average reservoir area (representing area of flooded land, net of	Click here to enter text.	
pre-impoundment water body) (km²) (or additional reservoir area if		
any, for expansion/rehabilitation projects)		
Power density (W / m ²)	Click here to enter text.	
Emissions intensity (gCO₂e / kWh)	Click here to enter text.	
National and regional policies, plans and commitments relevant to	Click here to enter text.	
mitigation		
Climate Change Resilience		
Hydrological data available for the project site and the basin, and	Click here to enter text.	
observed climate trends		
Regional and basin-level climate models relevant to the project	Click here to enter text.	
location, if any		
Any climate change predictions for the project location, and degree	Click here to enter text.	
of consistency		
National policies, plans and commitments relevant to adaptation and	Click here to enter text.	
resilience		
Other relevant information	Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations		
12.1 Assessment				
Climate Change Mitigation				
If power density is below 5 W/m ² , net GHG emissions (gCO ₂ e) of electricity generation have been estimated and independently verified	Choose an item.	Click here to enter text.		
If power density is below 5 W/m ² and estimated emissions are above 100 gCO ₂ e/kWh, a site-specific assessment of GHG emissions has been undertaken	Choose an item.	Click here to enter text.		
Climate Change Resilience				
An assessment of the project's resilience to climate change has been undertaken	Choose an item.	Click here to enter text.		
The assessment:				
 incorporates an assessment of plausible climate change at the project site 	Choose an item.	Click here to enter text.		
 identifies a range of climatological and hydrological conditions at the project site 	Choose an item.	Click here to enter text.		
 applies these conditions in a documented risk assessment or stress test 	Choose an item.	Click here to enter text.		
The risk assessment or stress test encompasses				
dam safety	Choose an item.	Click here to enter text.		
other infrastructural resilience	Choose an item.	Click here to enter text.		
environmental and social risks	Choose an item.	Click here to enter text.		
power generation availability	Choose an item.	Click here to enter text.		
12.2 Management				
Climate Change Mitigation				
If GHG emissions estimates assume design and management measures relevant to the implementation stage, these measures are in place	Choose an item.	Click here to enter text.		

Requirement	Requirement is met:	Findings and Observations
noqui oncire	yes (�⁄) or no (╳)	Thum, go and Case rations
Climate Change Resilience		
Measures relevant to the implementation		
stage are in place to avoid or reduce the	Choose an item.	Click here to enter text.
identified climate risks		
12.3 Conformance and Compliance		
Climate Change Mitigation		
Processes and objectives relating to mitigation	nave been and are on t	rack to be met with:
• no major non-compliances	Choose an item.	Click here to enter text.
no major non-conformances	Choose an item.	Click here to enter text.
Mitigation-related commitments have been	Choose an item.	Click here to enter text.
or are on track to be met	choose an item.	Click here to enter text.
Climate Change Resilience		
Processes and objectives relating to resilience h	ave been and are on tr	ack to be met with:
• no major non-compliances	Choose an item.	Click here to enter text.
no major non-conformances	Choose an item.	Click here to enter text.
Resilience-related commitments have been or	Change on item	Clieb have to enter took
are on track to be met	Choose an item.	Click here to enter text.
12.4 Outcomes		
Climate Change Mitigation		
The project's GHG emissions are		
demonstrated to be consistent with low	Choose an item.	Click here to enter text.
carbon power generation		
Climate Change Resilience		
Plans will deliver a project that is resilient to	Choose an item.	Click here to enter text.
climate change under a range of scenarios	CHOOSE all Itelli.	Click liefe to effect text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

Appendix 1 – Interviews

Ref	Interviewee/s, Position	Organisation	Date	Location
1				
2				
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18				
19				

Appendix 1 – Interviews HESG | 101

Appendix 2 – Documents

Ref	Author	Year	Title	Notes / links / language
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2				
3				
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8				
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Appendix 2 – Documents HESG | 102

Appendix 3 - Photographs

Photo 1: Click here to enter text.	Photo 2: Click here to enter text.	Photo 3: Click here to enter text.	
Photo 3: Click here to enter text. Photo 6: Click here to enter text.		Photo 6: Click here to enter text.	

Appendix 3 – Photographs HESG | 103



Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool

May 2022

Operation Stage

Published by:

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Email: sustainability@hydropower.org

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Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool



About the HESG	The Hydropower Sustainability Environmental, Social and Governance Gap Analysis Tool (HESG) enables hydropower project proponents and investors to identify and address gaps against good international industry practice. The HESG is based on the assessment framework of the Hydropower Sustainability Assessment Protocol (HSAP) and draws from the definitions of good international industry practice of the Hydropower Sustainability Guidelines on Good International Industry Practice (HGIIP). Projects that meet the good practice requirements of the HESG are eligible for certification against the Hydropower Sustainability Standard following the Harmonisation with the Hydropower Sustainability Tools process.
Intended users and uses	The HESG includes three separate stage tools: Preparation, Implementation and Operation. These reflect the different stages of hydropower development and have been designed to be used as standalone documents. Each tool provides an action plan to help project teams address any gaps against good practice.
	Official HESG assessments are carried out by accredited assessors, who take an evidence-based approach. All findings are supported by objective evidence, which is factual, reproducible, objective and verifiable. The HESG is most effective when operators and developers commit to implement the recommendations provided and resolve identified significant gaps. In addition, the tool is aligned with the safeguards and standards of international financial institutions and can be used to attract climate-aligned investment.
	Hydropower development and operation may involve public entities, private companies or combined partnerships, and responsibilities may change as the project progresses through its life cycle. It is intended that the organisation with the primary responsibility for a project at its particular life-cycle stage will have a central role in any HESG assessment.
Structure of the tool	The HESG comprises 12 sections that cover the environmental, social, governance and climate change topics of the HSAP and HGIIP. A summary at the beginning of the report presents any significant gaps against basic good practice and outlines an action plan for improved performance. Within each section, requirements for good international industry practice are presented and project findings are provided. For each finding, a key indicates whether the requirement is met. A summary section analyses significant gaps and identifies each one with the symbol •.
Supporting resources	Additional guidance on the structure, content and history of the HESG can be found online at: www.hydrosustainability.org
Version date	May 2022

A. Assessment Details

Project sponsor	
Assessor(s)	
Assessment objective	
Assessment dates	
Assessment report date	
Prepared for	
Limitations of the	
assessment	

A. Assessment Details HESG | 107

B. Project Details

Project name	
Country	
Location	
Purpose	
Developer / Owner	
Financer(s)	
Installed capacity (MW)	
Construction start date (planned or actual)	
Commercial Operations Date (planned or actual)	
Annual average generation (GWh / year)	
Associated infrastructure: road(s) (length)	
Transmission lines and sub-stations (names, lengths and capacities)	
Total cost (USD m)	
Annual operating costs (USD m)	
Project development cost not including transmission (USD m)	
Transmission costs for project development (USD m)	
Specific investment cost (USD m / MW)	
Levelised energy cost (USD / kWh)	
Dam type	
Dam height (m)	
Dam length at crest (m)	
Units (number, type, MW)	
Reservoir area at Full Supply Level (FSL) (km ²)	
Average net head at FSL (m)	
Average flow (m ³ / s)	
Design flow (m ³ / s)	
Load factor	
Number of physically displaced households	
Power density (W / m²)	
Emissions intensity (gCO ₂ e / kWh)	
Contacts / website	
	·

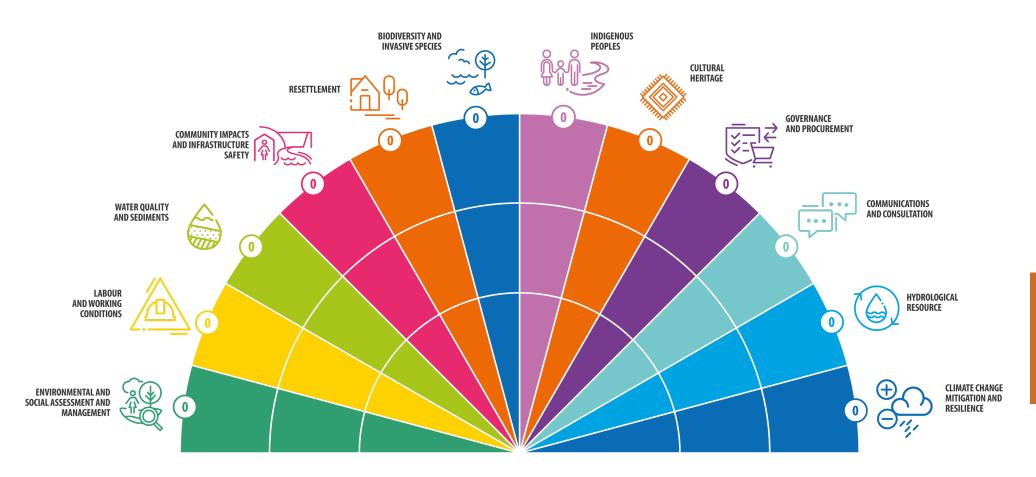
B. Project Details HESG | 108



Figure 1 – Map of dam site

B. Project Details HESG | 109

C. HESG Gap Analysis Diagram



C. HESG Gap Analysis Diagram HESG | 110

D. Significant gaps

		Sections											
		Environmental and Social Assessment and Management	2. Labour and Working Conditions	3. Water Quality and Sediments	4. Community Impacts and Infrastructure Safety	5. Resettlement	6. Biodiversity and Invasive Species	7. Indigenous Peoples	8. Cultural Heritage	9. Governance and Procurement	10. Communications and Consultation	11. Hydrological Resource	12. Climate Change Mitigation and Resilience
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2.													
3.													
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7. 8.													
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10.													-
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12.													
13.													
14.													
15.													
	NUMBER OF SIGNIFICANT GAPS BY SECTION:												
	TOTAL NUMBER OF SIGNIFICANT GAPS:	I		ı	1	ı	1	1	1	1	1		1

D. Significant gaps
HESG | 111

E. Environmental and Social Action Plan (ESAP)

The follo	The following actions are recommended to address and resolve the significant gaps.							
	Significant gaps	Action(s)	Responsibility	Indicator of achievement	Timeframe			
Section					<12 months	12-24 months	>24 months	

1 Environmental and Social Assessment and Management



Scope and Principle

This section addresses the plans and processes for environmental and social issues management. The principle is that negative environmental and social impacts associated with the hydropower facility are managed; avoidance, minimisation, mitigation, compensation and enhancement measures are implemented; and environmental and social commitments are fulfilled.

Background			
Identify the main environmental and social issues during operation	Click here to enter text.		
Identify the environmental regulator	Click here to enter text.		
Identify other regulators (e.g. on land, water use, Indigenous	Click here to enter text.		
Peoples)			
Summarise the ESIA regulatory requirements	Click here to enter text.		
Describe the non-physical cultural heritage in the project area	Click here to enter text.		
Other relevant information	Click here to enter text.		

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations				
1.1 Assessment	1.1 Assessment					
Systematic processes are in place to identify any ongoing or emerging environmental and social issues associated with the operating hydropower facility	Choose an item.	Click here to enter text.				
The processes utilise appropriate expertise	Choose an item.	Click here to enter text.				
Monitoring programmes are in place for identified issues	Choose an item.	Click here to enter text.				
1.2 Management						
Environmental and social management system is in place to manage measures to	Choose an item.	Click here to enter text.				

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
address identified environmental and social issues		
This management system is implemented utilising appropriate expertise (internal and external)	Choose an item.	Click here to enter text.
1.3 Conformance and Compliance		
Processes and objectives in environmental and	social management pla	ins have been and are on track to be met with:
no major non-compliances	Choose an item.	Click here to enter text.
 no major non-conformances 	Choose an item.	Click here to enter text.
Environmental and social commitments have been or are on track to be met	Choose an item.	Click here to enter text.
Environmental and social funding commitments have been or are on track to be met	Choose an item.	Click here to enter text.
1.4 Outcomes		
Negative environmental and social impacts associated with hydropower facility operations are avoided, minimised and mitigated with no significant gaps	Choose an item.	Click here to enter text.
Land disturbance associated with development of the hydropower project is rehabilitated or mitigated	Choose an item.	Click here to enter text.
The operating hydropower facility or the corporate entity to which it belongs can pay for social and environmental commitments	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

2 Labour and Working Conditions



Scope and Principle

This section addresses labour and working conditions, including employee and contractor opportunity, equity, diversity, health and safety. The principle is that workers are treated fairly and protected.

Background		
Labour requirements during operation (full-time equivalent)	Click here to enter text.	
Applicable key human resources regulations	Click here to enter text.	
Applicable key occupational health and safety (OH&S) regulations	Click here to enter text.	
Identify the regulator for labour law and OH&S	Click here to enter text.	
Other relevant information	Click here to enter text.	

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations				
2.1 Assessment	2.1 Assessment					
A periodically updated assessment has been undertaken of human resource and labour management requirements for the operating facility	Choose an item.	Click here to enter text.				
The assessment included project occupational health and safety issues, risks, and management measures	Choose an item.	Click here to enter text.				
Monitoring is being undertaken to assess if management measures are effective	Choose an item.	Click here to enter text.				
Ongoing or emerging labour management issues have been identified	Choose an item.	Click here to enter text.				
2.2 Management						
Human resource and labour management policies, plans and processes are in place to	Choose an item.	Click here to enter text.				

2. Labour and Working Conditions HESG | 116

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations			
address all labour management planning					
components					
Human resource and labour management					
policies, plans and processes of contractors,	Choose an item.	Click here to enter text.			
subcontractors and intermediaries are in	choose an item.	Click here to effect text.			
place					
2.3 Conformance and Compliance					
Processes and objectives relating to human reso	ource and labour mana	gement have been and are on track to be met with:			
• no major non-compliances	Choose an item.	Choose an item.			
• no major non-conformances	Choose an item.	Choose an item.			
Any labour related commitments have been	Choose an item.	Choose an item.			
or are on track to be met					
2.4 Outcomes					
There are no identified inconsistencies of					
labour management policies, plans and	Choose an item.	Click here to enter text.			
practices with internationally recognised	Choose an item.	Chick here to effect text.			
labour rights					

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1. • 2.

2. Labour and Working Conditions HESG | 117

3 Water Quality and Sediments



Scope and Principle

This section addresses the management of water quality, erosion and sedimentation issues associated with the operating hydropower facility. The principle is that water quality in the vicinity of the operating hydropower facility is not adversely impacted by activities of the operator, that erosion and sedimentation caused by the project are managed responsibly and do not present problems with respect to other social, environmental and economic objectives, and that commitments to address water quality, erosion and sedimentation issues are fulfilled.

Background				
Water Quality				
Description of water quality	Click here to enter text.			
Key water quality issues	Click here to enter text.			
Main influences on water quality	Click here to enter text.			
Sedimentology				
Key sediment issues	Click here to enter text.			
Sediment load (tonnes/year)	Click here to enter text.			
Catchment area at the dam	Click here to enter text.			
Other information	Click here to enter text.			

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations			
3.1 Assessment					
Ongoing or emerging issues have been identified	d in the following areas	3:			
• water quality	Choose an item.	Click here to enter text.			
 erosion and sedimentation 	Choose an item.	Click here to enter text.			
If management measures are required then mo	nitoring is being under	taken to assess if management measures are effective for:			
• water quality	Choose an item.	Click here to enter text.			
 erosion and sedimentation 	Choose an item.	Click here to enter text.			
3.2 Management					
Measures are in place to manage the following identified issues:					

3. Water Quality and Sediments HESG | 118

B	Requirement is met:		
Requirement	yes (❤) or no (※)	Findings and Observations	
water quality	Choose an item.	Click here to enter text.	
erosion and sedimentation	Choose an item.	Click here to enter text.	
3.3 Conformance and Compliance	3.3 Conformance and Compliance		
Processes and objectives in place to manage ea	ch of the following hav	e been and are on track to be met:	
water quality, with no major non- compliances	Choose an item.	Click here to enter text.	
water quality, with no major non- conformances	Choose an item.	Click here to enter text.	
 erosion and sedimentation, with no major non-compliances 	Choose an item.	Click here to enter text.	
 erosion and sedimentation, with no major non-conformances 	Choose an item.	Click here to enter text.	
Commitments related to the following have been	en or are on track to be	met:	
water quality	Choose an item.	Click here to enter text.	
erosion and sedimentation	Choose an item.	Click here to enter text.	
3.4 Outcomes			
Negative water quality impacts arising from activities of the operating hydropower facility are avoided, minimised and mitigated	Choose an item.	Click here to enter text.	
Erosion and sedimentation issues are avoided, minimised and mitigated	Choose an item.	Click here to enter text.	

3. Water Quality and Sediments

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
	• 2.

3. Water Quality and Sediments HESG | 120

4 Community Impacts and Infrastructure Safety



Scope and Principle

This section addresses how impacts of development of the hydropower facility on project-affected communities have been addressed, in cases where these commitments are well-documented against a pre-project baseline. These impacts include economic displacement, impacts on livelihoods and living standards, public health impacts, impacts to rights, risks and opportunities of those affected by the project, infrastructure safety risks and additional benefits that can arise from a hydropower facility. The principle is that livelihoods and living standards impacted by the project have been improved relative to pre-project conditions for project-affected communities, that commitments to project-affected communities have been fulfilled, and that life, property and community assets and resources are protected from the consequences of dam failure and other infrastructure safety risks. This section does not address requirements that relate to physical displacement or to Indigenous Peoples, which are addressed in Section 5 and 7. Other interested parties and groups are addressed in Section 10.

Background		
In the case of older projects, are there well-documented commitments in relation to project-affected communities and/or projects benefits made at the time of		
project approval and/or data on the pre-project baseline against which to compare post-project?		
Yes, all scoring statements are relevant	Click here to enter text.	
No, scoring statements on project affected communities and/or	Click here to enter text.	
project benefits are not relevant (in this case, issues in relation to		
these topics should be taken into consideration under Section 1 –		
Environmental and Social Issues Management)		

Community Impacts and Benefits	
Description of project-affected communities and how they are	Click here to enter text.
affected (distinguish between directly affected vs economically	
displaced vs other affected communities and include number of	
people and households)	
Agencies relevant to land acquisition	Click here to enter text.
Agencies relevant to livelihood restoration and project benefits	Click here to enter text.
Infrastructure Safety and Public Health	
Type of dam	Click here to enter text.
Dam height (m)	Click here to enter text.
Probable maximum flood (m ³ / s)	Click here to enter text.
Design flood (expressed as estimated flood with return period)	Click here to enter text.

Spillway capacity (m³/s)	Click here to enter text.
Spillway height (masl)	Click here to enter text.
Headrace length (m)	Click here to enter text.
Headrace width (m)	Click here to enter text.
Headrace capacity (m ³ / s)	Click here to enter text.
Seismicity	Click here to enter text.
Geology	Click here to enter text.
Dam safety regulatory authorities	Click here to enter text.
Local presence/capacity of emergency services	Click here to enter text.
Potential safety risks in this context	Click here to enter text.
Degree of risk of dam failure and in what way	Click here to enter text.
Population at risk of dam break (locations, numbers)	Click here to enter text.
Dam safety standards followed	Click here to enter text.
Agencies relevant to dam safety	Click here to enter text.
Other infrastructure safety issues	Click here to enter text.
Description of key public health issues	Click here to enter text.
Agencies relevant to public health	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
4.1 Assessment		
Community Impacts and Benefits		
Monitoring is being undertaken to assess if the	following commitment	s have been delivered and if management measures are effective:
 commitments to project-affected communities 	Choose an item.	Click here to enter text.
• commitments to project benefits	Choose an item.	Click here to enter text.
Ongoing or emerging issues relating to the follo	wing have been identif	ied:
 issues that affect project-affected communities 	Choose an item.	Click here to enter text.
 delivery of project benefits 	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
Ongoing or emerging issues relating to the following have been identified:		

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
dam and other infrastructure safety	Choose an item.	Click here to enter text.
 public health issues associated with the operating hydropower facility 	Choose an item.	Click here to enter text.
Routine monitoring of dam and infrastructure safety is being undertaken to identify risks and assess the effectiveness of management measures	Choose an item.	Click here to enter text.
If public health issues require management measures then monitoring is being undertaken to assess if management measures are effective	Choose an item.	Click here to enter text.
4.2 Management		
Community Impacts and Benefits		
Measures are in place to deliver commitments:		
• to project-affected communities	Choose an item.	Click here to enter text.
• to project benefits	Choose an item.	Click here to enter text.
Measures are in place to manage any identified	issues relating to these	e commitments:
• to project-affected communities	Choose an item.	Click here to enter text.
• to project benefits	Choose an item.	Click here to enter text.
If there are any formal agreements with project-affected communities, these are publicly disclosed	Choose an item.	Click here to enter text.
Commitments to project benefits are publicly disclosed	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
Dam and other infrastructure safety management plans and processes have been developed in conjunction with relevant regulatory and local authorities	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
These plans and processes provide for communication of public safety measures	Choose an item.	Click here to enter text.
Emergency response plans and processes include awareness and training programmes and emergency response simulations	Choose an item.	Click here to enter text.
Measures are in place to manage identified public health issues	Choose an item.	Click here to enter text.
4.3 Conformance and Compliance		
Community Impacts and Benefits		
Processes and objectives in place to manage the	e following have been a	and are on track to be met:
 delivery of commitments to project-affected communities, with no major non- compliances 	Choose an item.	Click here to enter text.
 delivery of commitments to project-affected communities, with no major non- conformances 	Choose an item.	Click here to enter text.
 project benefits, with no major non- compliances 	Choose an item.	Click here to enter text.
 project benefits, with no major non- conformances 	Choose an item.	Click here to enter text.
Commitments have been or are on track to be	net relating to:	
project-affected communities	Choose an item.	Click here to enter text.
project benefits	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
Processes and objectives in place to manage the	e following have been a	and are on track to be met:
 dam and other infrastructure safety, with no major non-compliances 	Choose an item.	Click here to enter text.
 dam and other infrastructure safety, with no major non-conformances 	Choose an item.	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
 public health issues, with no major non- compliances 	Choose an item.	Click here to enter text.
 public health issues, with no major non- conformances 	Choose an item.	Click here to enter text.
Commitments have been or are on track to be r	net relating to:	
 dam and other infrastructure safety 	Choose an item.	Click here to enter text.
• public health	Choose an item.	Click here to enter text.
4.4 Outcomes		
Community Impacts and Benefits		
Livelihoods and living standards impacted by the project have been or are on track to be improved	Choose an item.	Click here to enter text.
Economic displacement has been fairly compensated, preferably through provision of comparable goods, property or services	Choose an item.	Click here to enter text.
Communities directly affected by the development of the hydropower facility and any other identified beneficiary of the facility have received or are on track to receive benefits	Choose an item.	Click here to enter text.
Infrastructure Safety and Public Health		
Safety risks have been avoided, minimised and mitigated with no significant gaps	Choose an item.	Click here to enter text.
Negative public health impacts arising from activities of the operating hydropower facility are avoided, minimised and mitigated	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

Resettlement



Scope and Principle

Other relevant information

This section addresses how the physical displacement arising from development of the hydropower facility has been addressed, in cases where resettlement occurred and commitments are well-documented against a pre-project baseline. The principle is that the dignity and human rights of those physically displaced have been respected; that these matters have been dealt with in a fair and equitable manner; that livelihoods and standards of living for resettlees and host communities have been improved; and that commitments made to resettlees and host communities have been fully fulfilled. This section does not address those that are only economically displaced, who are addressed in Section 4.

Background		
Did the project require or result in any physical displacement of people? Please state the evidence on which this determination is made.		
Yes, this section is relevant (for older projects, move on to the next	Click here to enter text.	
question)		
No, this section is not relevant	Click here to enter text.	
In the case of older projects, are there well-documented commitment	s in relation to resettlement made at the time of project approval and/or data on the pre-	
project baseline against which to compare post-project?		
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant (in this case, issues in relation to	Click here to enter text.	
resettlement should be taken into consideration under Section 1 –		
Environmental and Social Issues Management)		
Description of physically displaced communities and how they are	Click here to enter text.	
displaced (distinguish between permanently vs temporarily and		
include number of people and households)		
Name and number of settlements	Click here to enter text.	
Agencies relevant to land acquisition	Click here to enter text.	
Agencies relevant to livelihood restoration	Click here to enter text.	

HESG | 127 5. Resettlement

Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations	
5.1 Assessment			
Monitoring is being undertaken to assess if commitments made to resettlees and host communities have been delivered and if management measures are effective	Choose an item.	Click here to enter text.	
Ongoing or emerging issues relating to resettlement have been identified	Choose an item.	Click here to enter text.	
5.2 Management			
Measures to address resettlement are documented in a Resettlement Action Plan	Choose an item.	Click here to enter text.	
Measures are in place to deliver commitments to resettlees and host communities	Choose an item.	Click here to enter text.	
Measures are in place to manage any issues relating to resettlement, including provision of grievance mechanisms	Choose an item.	Click here to enter text.	
Formal agreements with resettlees and host communities are publicly disclosed	Choose an item.	Click here to enter text.	
5.3 Conformance and Compliance	5.3 Conformance and Compliance		
Processes and objectives in the Resettlement A	ction Plan have been a	nd are on track to be met with:	
• no major non-compliances	Choose an item.	Click here to enter text.	
• no major non-conformances	Choose an item.	Click here to enter text.	
Any resettlement related commitments have been or are on track to be met	Choose an item.	Click here to enter text.	
5.4 Outcomes			
Resettlement has been and is being treated in a fair and equitable manner	Choose an item.	Click here to enter text.	
Resettlees and host communities have experienced or are on track to experience a	Choose an item.	Click here to enter text.	

5. Resettlement HESG | 128

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
timely improvement in livelihoods and living		
standards relative to the pre-project baseline		

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

5. Resettlement HESG | 129

6 Biodiversity and Invasive Species



Scope and Principle

This section addresses ecosystem values, habitat and specific issues such as threatened species and fish passage in the catchment, reservoir and downstream areas, as well as potential impacts arising from pest and invasive species associated with the operating hydropower facility. The principle is that there are healthy, functional and viable aquatic and terrestrial ecosystems in the area that are sustainable over the long-term; that biodiversity impacts arising from the operating hydropower facility are managed responsibly; that ongoing or emerging biodiversity issues are identified and addressed as required; and that commitments to implement biodiversity and invasive species measures are fulfilled.

Background	
Short description of the ecological region in the project area	Click here to enter text.
Protected areas (national parks and reserves etc) and their distance	Click here to enter text.
from the project	
Critical habitats in the project area, including important bird areas,	Click here to enter text.
hotspots of endemism etc.	
# threatened species in the directly affected area: terrestrial	Click here to enter text.
# threatened species: aquatic	Click here to enter text.
Any other species of conservation importance	Click here to enter text.
Migratory pathways	Click here to enter text.
Invasive species: terrestrial	Click here to enter text.
Invasive species: aquatic	Click here to enter text.
Key threats to biodiversity	Click here to enter text.
Agencies involved in biodiversity conservation	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
6.1 Assessment		
Ongoing or emerging biodiversity issues have been identified	Choose an item.	Click here to enter text.

6. Biodiversity and Invasive Species HESG | 130

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
If management measures are required, then monitoring is being undertaken to assess if management measures are effective	Choose an item.	Click here to enter text.
6.2 Management		
Measures are in place to manage identified biodiversity issues	Choose an item.	Click here to enter text.
6.3 Conformance and Compliance		
Processes and objectives in place to manage bio	diversity issues have b	een and are on track to be met with:
• no major non-compliances	Choose an item.	Click here to enter text.
• no major non-conformances	Choose an item.	Click here to enter text.
Biodiversity related commitments have been or are on track to be met	Choose an item.	Click here to enter text.
6.4 Outcomes		
Negative biodiversity impacts arising from activities of the operating facility are avoided, minimised, mitigated, and compensated with no significant gaps	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

6. Biodiversity and Invasive Species HESG | 131

7 Indigenous Peoples



Scope and Principle

This section addresses the rights at risk and opportunities of Indigenous Peoples with respect to the hydropower facility, recognising that as social groups with identities distinct from dominant groups in national societies, they are often the most marginalised and vulnerable segments of the population. The principle is that the operating facility respects the dignity, human rights, aspirations, culture, lands, knowledge, practices and natural resource-based livelihoods of Indigenous Peoples in an ongoing manner throughout the project life.

Background		
Are any of the affected people Indigenous Peoples? Please state the evidence on which this determination is made.		
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant	Click here to enter text.	

	Add columns for each Indigenous People
Brief description of the peoples and their culture, lands, and	Click here to enter text.
representation	
Directly affected communities and how they are affected	Click here to enter text.
Other affected indigenous communities	Click here to enter text.
# households physically displaced	Click here to enter text.
# households economically displaced	Click here to enter text.

Agencies relevant to Indigenous Peoples	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
7.1 Assessment		
Ongoing or emerging issues relating to the operating hydropower facility that may affect Indigenous Peoples' rights have been identified	Choose an item.	Click here to enter text.

7. Indigenous Peoples HESG | 132

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
If management measures are required, then monitoring is being undertaken to assess if management measures are effective	Choose an item.	Click here to enter text.
7.2 Management		
Measures are in place to address the Indigenous Peoples' rights at risk	Choose an item.	Click here to enter text.
Formal agreements are publicly disclosed	Choose an item.	Click here to enter text.
7.3 Conformance and Compliance		
Processes and objectives relating to Indigenous	· · ·	I
no major non-compliances	Choose an item.	Click here to enter text.
• no major non-conformances	Choose an item.	Click here to enter text.
Commitments made to Indigenous Peoples have been or are on track to be met	Choose an item.	Click here to enter text.
7.4 Outcomes		
Plans provide for negative impacts of the project to Indigenous Peoples' rights to be avoided, minimised, mitigated or compensated with no significant gaps	Choose an item.	Click here to enter text.
Plans provide some practicable opportunities for positive impacts to be achieved	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

7. Indigenous Peoples HESG | 133

8 Cultural Heritage

Other important local or regional cultural heritage values and issues



Scope and Principle

This section addresses cultural heritage, with specific reference to physical cultural resources, associated with the hydropower facility. The principle is that physical cultural resources are identified, their importance is understood, and measures are in place to address those identified to be of high importance. This section does not address non-physical cultural resources, which are addressed in Section 1 and/or in Sections 5 and 7 when relevant.

Background		
Does the project affect any physical cultural resources? Please state the evidence on which this determination is made.		
Yes, this section is relevant	Click here to enter text.	
No, this section is not relevant	Click here to enter text.	
Sites of physical cultural heritage affected by or in proximity to the	How they are affected	
project-affected areas		
Click here to enter text.	Click here to enter text.	
Agencies responsible for cultural heritage	Click here to enter text.	

Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
8.1 Assessment		
Ongoing or emerging cultural heritage issues with respect to physical cultural resources have been identified	Choose an item.	Click here to enter text.
If management measures are required, then monitoring is being undertaken to assess if management measures are effective.	Choose an item.	Click here to enter text.
8.2 Management		

8. Cultural Heritage HESG | 134

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations	
Measures are in place to manage identified cultural heritage issues	Choose an item.	Click here to enter text.	
8.3 Conformance and Compliance	8.3 Conformance and Compliance		
Processes and objectives in place to manage cu	Itural heritage issues ha	ave been and are on track to be met with:	
• no major non-compliances	Choose an item.	Click here to enter text.	
• no major non-conformances	Choose an item.	Click here to enter text.	
Cultural heritage related commitments have been or are on track to be met	Choose an item.	Click here to enter text.	
8.4 Outcomes			
Negative cultural heritage impacts arising from activities of the operating hydropower facility are avoided, minimised, mitigated and compensated with no significant gaps	Choose an item.	Click here to enter text.	

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

8. Cultural Heritage HESG | 135

9 Governance and Procurement



Scope and Principle

This section addresses corporate and external governance considerations for the operating hydropower facility. The principle is that the owner/operator has sound corporate business structures, policies and practices; addresses transparency, integrity and accountability issues; can manage external governance issues (e.g. institutional capacity shortfalls, political risks including transboundary issues, public sector corruption risks); and can ensure compliance.

Background	
Key information on political context and public sector risks Click here to enter text.	
Key information on corporate ownership and governance	Click here to enter text.
Details of the concession, if applicable	Click here to enter text.
Key licenses or permits	Click here to enter text.
Other relevant information	Click here to enter text.

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
9.1 Assessment		
Ongoing or emerging political and public sector governance issues have been identified	Choose an item.	Click here to enter text.
Corporate governance requirements and issues have been identified	Choose an item.	Click here to enter text.
Monitoring is being undertaken to assess if corporate governance measures are effective	Choose an item.	Click here to enter text.
9.2 Management		
Processes are in place to manage the following:		
 corporate, political and public sector risks 	Choose an item.	Click here to enter text.
• compliance	Choose an item.	Click here to enter text.
 social and environmental responsibility 	Choose an item.	Click here to enter text.
 procurement of goods and services 	Choose an item.	Click here to enter text.
• grievance mechanisms	Choose an item.	Click here to enter text.

9. Governance and Procurement HESG | 136

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
 ethical business practices 	Choose an item.	Click here to enter text.
• transparency	Choose an item.	Click here to enter text.
Policies and processes are communicated	Choose an item.	Click here to enter text.
internally and externally as appropriate	Choose an item.	Click liefe to effect text.
In case of capacity shortfalls, appropriate		
external expertise is contracted for additional	Choose an item.	Click here to enter text.
support		
9.3 Conformance and Compliance		
The project has no major non-compliances	Choose an item.	Click here to enter text.
9.4 Outcomes		
There are no significant unresolved corporate and external governance issues identified	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1. • 2.

9. Governance and Procurement HESG | 137

10 Communications and Consultation



Scope and Principle

This section addresses ongoing engagement with project stakeholders, both within the company as well as between the company and external stakeholders (e.g. affected communities, governments, key institutions, partners, contractors, catchment residents, etc). The principle is that stakeholders are identified and engaged in the issues of interest to them, and communication and consultation processes maintain good stakeholder relations throughout the project life.

Background	
Directly affected community-level stakeholders Click here to enter text.	
Directly affected institutional-level stakeholders Click here to enter text.	
Other relevant information Click here to enter text.	

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
10.1 Assessment		
Ongoing or emerging issues relating to hydropower facility communications and consultation have been identified	Choose an item.	Click here to enter text.
Requirements and approaches are determined through a periodically updated assessment process involving stakeholder mapping	Choose an item.	Click here to enter text.
Effectiveness is monitored	Choose an item.	Click here to enter text.
10.2 Management		
Communications and consultation plans and processes are in place to manage communications and engagement with stakeholders	Choose an item.	Click here to enter text.
These plans and process include an appropriate grievance mechanism	Choose an item.	Click here to enter text.

10. Communications and Consultation HESG | 138

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
These plans and processes outline communication and consultation needs and approaches for various stakeholder groups and topics	Choose an item.	Click here to enter text.
10.3 Stakeholder Engagement		
The project operation stage involves engagement with directly affected stakeholders	Choose an item.	Click here to enter text.
Engagement is:		
appropriately timed and scoped	Choose an item.	Click here to enter text.
often two-way	Choose an item.	Click here to enter text.
undertaken in good faith	Choose an item.	Click here to enter text.
The business interacts with a range of directly affected stakeholders to understand issues of	Choose an item.	Click here to enter text.
Ongoing processes are in place for stakeholders to raise issues and get feedback	Choose an item.	Click here to enter text.
Ongoing processes are in place for:		
environmental and social issues	Choose an item.	Click here to enter text.
project-affected communities	Choose an item.	Click here to enter text.
resettlees and host communities	Choose an item.	Click here to enter text.
Indigenous Peoples	Choose an item.	Click here to enter text.
employees and contractors on human resources and labour management issues	Choose an item.	Click here to enter text.
management of climate risks	Choose an item.	Click here to enter text.
Channels of communication with Indigenous Peoples are maintained	Choose an item.	Click here to enter text.
These channels are:		
appropriately timed	Choose an item.	Click here to enter text.
culturally appropriate	Choose an item.	Click here to enter text.
• two-way	Choose an item.	Click here to enter text.

10. Communications and Consultation HESG | 139

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
A mutually-agreed disputes procedure is in place with Indigenous Peoples	Choose an item.	Click here to enter text.
Public disclosure:		
 the business makes significant project reports publicly available 	Choose an item.	Click here to enter text.
 the business publicly reports on project performance, in some sustainability areas 	Choose an item.	Click here to enter text.
 power density calculations, estimated GHG emissions, and / or the results of a site-specific assessment are publicly disclosed 	Choose an item.	Click here to enter text.
10.4 Conformance and Compliance		
Processes and objectives relating to communications and consultation have been and are on track to be met with:		
 no major non-compliances 	Choose an item.	Click here to enter text.
no major non-conformances	Choose an item.	Click here to enter text.
Communications related commitments have been or are on track to be met	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	• 1.
Chok here to enter text.	• 2.

10. Communications and Consultation HESG | 140

11 Hydrological Resource



Scope and Principle

This section addresses the hydrological resource availability and reliability to the operating facility, reservoir planning and downstream flow regimes in relation to operating hydropower facility. The principle is that power generation planning and operations take into account hydrological resource availability and reliability in the short- and long-term, that issues with respect to downstream flow regimes are identified and addressed, and that the reservoir is well managed taking into account power generation operations, environmental and social management requirements, and multi-purpose uses where relevant, and that issues with respect to downstream flow regimes are identified and addressed.

Background				
Hydrology and flows				
Average flow at dam (m ³ /s)	Click here to enter text.			
Minimum monthly average flow (m ³ /s)	Click here to enter text.			
Maximum monthly average flow (m ³ /s)	Click here to enter text.			
Lowest observed flow (m³/s)	Click here to enter text.			
Highest observed flow (m ³ /s)	Click here to enter text.			
Design flow (m ³ /s)	Click here to enter text.			
Affected river reaches (start/end and how affected)	Click here to enter text.			
Proposed downstream flow regimes for environmental or social	Click here to enter text.			
objectives				
Reservoir				
Reservoir length (km)	Click here to enter text.			
Minimum operating level MOL (masl)	Click here to enter text.			
Normal operating level (masl)	Click here to enter text.			
Full supply level FSL (masl)	Click here to enter text.			
Reservoir area at FSL (km²)	Click here to enter text.			
Reservoir area at MOL (km²)	Click here to enter text.			
Volume at FSL (million m³)	Click here to enter text.			
Volume at MOL (million m³)	Click here to enter text.			
Average retention time in days	Click here to enter text.			
Number of days for filling	Click here to enter text.			
Other relevant information	Click here to enter text.			

11. Hydrological Resource HESG | 141

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations		
11.1 Assessment				
Ongoing or emerging issues in the following are	as have been identified	d:		
 hydrological resource availability and reliability 	Choose an item.	Click here to enter text.		
• reservoir management	Choose an item.	Click here to enter text.		
 downstream flow regimes 	Choose an item.	Click here to enter text.		
If management measures are required then mo	nitoring is being under	taken to assess if management measures are effective:		
reservoir management	Choose an item.	Click here to enter text.		
downstream flow regimes	Choose an item.	Click here to enter text.		
Monitoring is being undertaken of hydrological resource availability and reliability	Choose an item.	Click here to enter text.		
Inputs to this monitoring include:				
field measurements	Choose an item.	Click here to enter text.		
appropriate statistical indicators	Choose an item.	Click here to enter text.		
issues which may impact on water availability or reliability	Choose an item.	Click here to enter text.		
a hydrological model	Choose an item.	Click here to enter text.		
11.2 Management				
Measures are in place to guide generation oper	ations that are based o	n:		
 analysis of the hydrological resource availability 	Choose an item.	Click here to enter text.		
a range of technical considerations	Choose an item.	Click here to enter text.		
an understanding of power system opportunities and constraints	Choose an item.	Click here to enter text.		
Measures are in place to manage identified reservoir management issues	Choose an item.	Click here to enter text.		

11. Hydrological Resource

Requirement	Requirement is met: yes (�) or no (淡)	Findings and Observations
Measures are in place to address identified downstream flow issues	Choose an item.	Click here to enter text.
Where formal commitments have been made to downstream flow regimes, these are publicly disclosed	Choose an item.	Click here to enter text.
11.3 Conformance and Compliance		
Processes and objectives in place to manage ea	ch of the following hav	e been and are on track to be met:
 reservoir management, with no major non- compliances 	Choose an item.	Click here to enter text.
 reservoir management, with no major non- conformances 	Choose an item.	Click here to enter text.
 downstream flow regimes, with no major non-compliances 	Choose an item.	Click here to enter text.
 downstream flow regimes, with no major non-conformances 	Choose an item.	Click here to enter text.
Commitments relating to the following have be	en or are on track to be	e met:
• reservoir management	Choose an item.	Click here to enter text.
downstream flow regimes	Choose an item.	Click here to enter text.
11.4 Outcomes		
Downstream flow regimes take into account environmental, social and economic objectives	Choose an item.	Click here to enter text.
Downstream flow regimes take agreed transboundary objectives into account, where relevant	Choose an item.	Click here to enter text.

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Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

11. Hydrological Resource

12 Climate Change Mitigation and Resilience



Scope and Principle

This section addresses the estimation and management of the project's greenhouse gas (GHG) emissions, analysis and management of the risks of climate change for the project, and the project's role in climate change adaptation. The principle is that the project's GHG emissions are consistent with low carbon power generation, the project is resilient to the effects of climate change, and the project contributes to wider adaptation to climate change.

Background				
Climate Change Mitigation	Climate Change Mitigation			
Capacity (MW) (or additional capacity in case of expansion/	Click here to enter text.			
rehabilitation projects)				
Average reservoir area (representing area of flooded land, net of	Click here to enter text.			
pre-impoundment water body) (km²) (or additional reservoir area if				
any, for expansion/rehabilitation projects)				
Power density (W / m ²)	Click here to enter text.			
Emissions intensity (gCO₂e / kWh)	Click here to enter text.			
National and regional policies, plans and commitments relevant to	Click here to enter text.			
mitigation				
Climate Change Resilience				
Hydrological data available for the project site and the basin, and	Click here to enter text.			
observed climate trends				
Regional and basin-level climate models relevant to the project	Click here to enter text.			
location, if any				
Any climate change predictions for the project location, and degree	Click here to enter text.			
of consistency				
National policies, plans and commitments relevant to adaptation and	Click here to enter text.			
resilience				
Other relevant information	Click here to enter text.			

Requirement	Requirement is met: yes (�/) or no (※)	Findings and Observations		
12.1 Assessment				
Climate Change Mitigation				
If power density is below 5 W/m ² , net GHG emissions (gCO ₂ e) of electricity generation are calculated, independently verified and periodically updated	Choose an item.	Click here to enter text.		
If power density is below 5 W/m ² and estimated emissions are above 100 gCO ₂ e/kWh, a site-specific assessment of GHG emissions is undertaken and periodically updated	Choose an item.	Click here to enter text.		
Climate Change Resilience				
An assessment of the project's resilience to climate change is undertaken and periodically updated	Choose an item.	Click here to enter text.		
The assessment:				
 incorporates an assessment of plausible climate change at the project site 	Choose an item.	Click here to enter text.		
 identifies a range of climatological and hydrological conditions at the project site 	Choose an item.	Click here to enter text.		
 applies these conditions in a documented risk assessment or stress test 	Choose an item.	Click here to enter text.		
The risk assessment or stress test encompasses:				
dam safety	Choose an item.	Click here to enter text.		
other infrastructural resilience	Choose an item.	Click here to enter text.		
 environmental and social risks 	Choose an item.	Click here to enter text.		
 power generation availability 	Choose an item.	Click here to enter text.		
12.2 Management Climate Change Mitigation				

Requirement	Requirement is met: yes (❤) or no (※)	Findings and Observations
If GHG emissions estimates assume design and management measures, these measures are in place	Choose an item.	Click here to enter text.
Climate Change Resilience		
Measures are in place to avoid or reduce identified climate risks	Choose an item.	Click here to enter text.
12.3 Conformance and Compliance		
Climate Change Mitigation		
Processes and objectives relating to mitigation	nave been and are on t	rack to be met with:
• no major non-compliances	Choose an item.	Click here to enter text.
• no major non-conformances	Choose an item.	Click here to enter text.
Mitigation-related commitments have been or are on track to be met	Choose an item.	Click here to enter text.
Climate Change Resilience		
Processes and objectives relating to resilience h	ave been and are on tr	ack to be met with:
• no major non-compliances	Choose an item.	Click here to enter text.
• no major non-conformances	Choose an item.	Click here to enter text.
Resilience-related commitments have been or are on track to be met	Choose an item.	Click here to enter text.
12.4 Outcomes		
Climate Change Mitigation		
The project's GHG emissions are		
demonstrated to be consistent with low	Choose an item.	Click here to enter text.
carbon power generation		
Climate Change Resilience		
Findings of the climate change assessment		
indicate that the project is resilient to climate change	Choose an item.	Click here to enter text.

Summary of Findings

Summary and other notable issues	List of significant gaps
Click here to enter text.	1.2.

Appendix 1 – Interviews

Ref	Interviewee/s, Position	Organisation	Date	Location
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Appendix 2 – Documents

Ref	Author	Year	Title	Notes / links / language
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Appendix 2 – Documents HESG | 150

Appendix 3 - Photographs

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Photo 3: Click here to enter text.	Photo 5: Click here to enter text.	Photo 6: Click here to enter text.	

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