

# **Hydropower Sustainability Assessment Protocol**

**Implementation  
Draft3 Final  
28<sup>th</sup> June 2010**

## About this Document

This document is one of a consecutive series of documents that has been developed through the Hydropower Sustainability Assessment Forum process, in working towards a Recommended Final Draft Hydropower Sustainability Assessment Protocol to present to Forum member organisations to consider for adoption (in the case of IHA) and endorsement (in the case of all other Forum members).

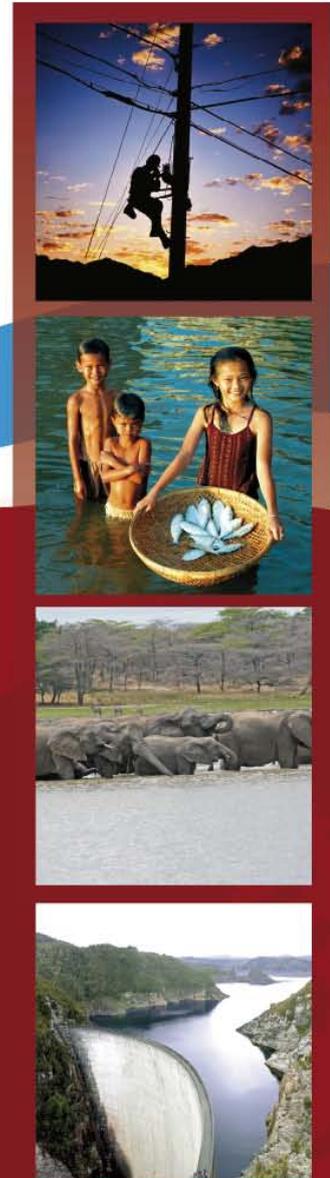
This document is one of a set of documents that comprise the HSAP Draft3 Final. This document provides the HSAP Draft3 Final Implementation Assessment Tool with acceptance of proposed edits from Forum members to the HSAP Draft2 Final 24<sup>th</sup> May 2010, as well as acceptance of Forum Coordinator proposals for the way forward where there were conflicts or issues with proposed edits. There is a track changes version of this same document that has been distributed that shows all proposed edits and accompanying comments and proposals. Colour codes used in the track changes version have been retained in this document. Those items that are highlighted in blue have been identified by the IHA as high priority proposed edits, and those in yellow as second order priority proposed edits.

The intention is for Forum members and their reference groups to review the Operation documents (both track changes and changes accepted versions) and the other accompanying documents that comprise the HSAP Draft3 Final – Background, Early Stage, Preparation, and Operation documents – in preparation for the Forum's final meeting via Webinar 6 on the 15<sup>th</sup> of July 2010. By viewing this version with all track changes and proposals accepted, the Forum members can read this cleaner version and consider if they have any issues with the acceptance of any of the proposed edits.

This and the preceding page would be deleted in the Hydropower Sustainability Assessment Protocol 2010 that is ultimately released as a public document, and the following represents what is proposed to be presented as the Forum's Recommended Final Draft Protocol – Implementation Assessment Tool.

Final Draft Protocol recommended by the Hydropower Sustainability Assessment Forum to its member organisations for adoption and endorsement

Published by the International Hydropower Association



## Recommended Final Draft Hydropower Sustainability Assessment Protocol

July 2010

# Implementation Assessment Tool

The following organisations endorse this Protocol



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## The Hydropower Sustainability Assessment Protocol

The Hydropower Sustainability Assessment Protocol (the “Protocol”) is a sustainability assessment framework for hydropower projects and operations. It outlines the important sustainability considerations for a hydropower project, and enables production of a sustainability profile for that project. The four Protocol assessment tools – Early Stage, Preparation, Implementation, and Operation – are designed to be stand-alone assessments applied at particular stages of the project life cycle. An assessment with one tool does not depend on earlier stage assessments to have been undertaken. The assessment tools are designed to be applicable up to major decision points in the project life cycle, and are most effective where there are repeat applications to help guide continuous improvement measures. The assessment tools and associated decision points are shown in Figure 1.

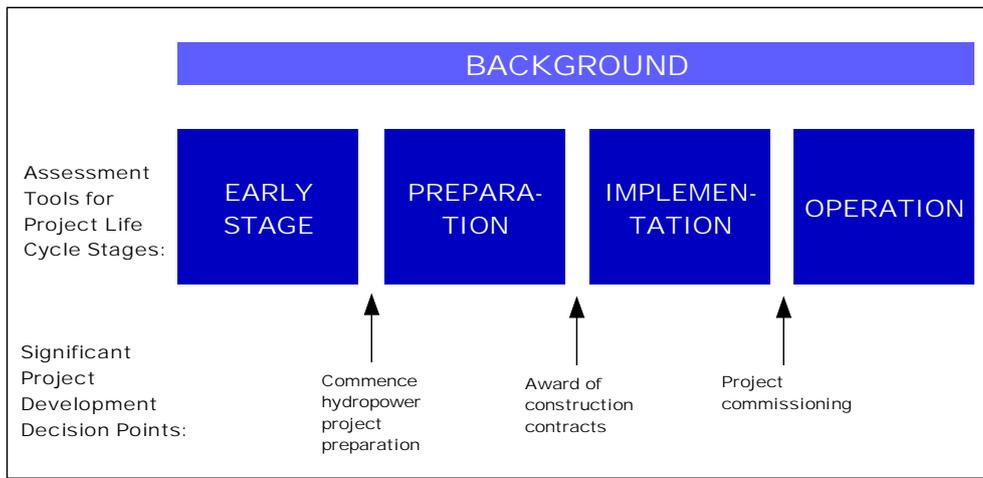


Figure 1 - Protocol Assessment Tools and Major Decision Points

## Overview of the Implementation Assessment Tool

This document provides the Implementation assessment tool, and assumes that the user has already made him or herself familiar with the Protocol Background which describes the overall approach and use of the Protocol assessment tools. The Implementation assessment tool assesses the implementation stage of a hydropower project, during which construction, resettlement, environmental and other management plans and commitments are implemented. Commissioning of the power station enables the project to start to earn money, and in fact often some units (i.e. turbines) of a multiple unit power station are commissioned while others are still being installed to assist in meeting the financial commitments of the project. An assessment made prior to the decision to commission any units would assess whether all commitments have been met, and can inform the timing and conditions of project commissioning.

## Implementation Topic Relevance Guide

Not all topics in Implementation assessment tool will be relevant for every project assessment, and their relevance must be considered on a project-by-project basis. The project representative would make a case for a topic to be not relevant and present evidence to support this. The assessor reviews the evidence and draws a conclusion, documenting the evidence cited, the quality of the evidence, and the basis for this conclusion.

Some examples of circumstances that might make topics not relevant, subject to presentation of credible evidence, could be:

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- No cultural heritage identified in the project affected area → Cultural Heritage topic is not relevant
- No indigenous peoples in the project affected area → Indigenous Peoples topic is not relevant
- No resettlement required by the project → Resettlement topic is not relevant

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## I-1: Communications & Consultation

This topic 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 intent 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.

### Scoring:

- 1 - *There are significant gaps relative to basic good practice.*
- 2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*
- 3 – **Assessment:** Communications and consultation requirements and approaches have been identified through an assessment process involving stakeholder mapping, supported by ongoing monitoring.
  - **Management:** Communications and consultation plans and processes, including an appropriate grievance mechanism, are in place to manage communications and engagement with stakeholders; these outline communication and consultation needs and approaches for various stakeholder groups and topics.
  - **Stakeholder Engagement:** The project implementation stage involves appropriately timed and scoped, and often two-way, engagement with directly affected stakeholders; ongoing processes are in place for stakeholders to raise issues and get feedback.
  - **Conformance/Compliance:** Processes and objectives relating to communications and consultation have been and are on track to be met with no major non-compliances or non-conformances, and communications related commitments have been or are on track to be met.
- 4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*
- 5 – **Assessment:** In addition, the stakeholder mapping takes broad considerations into account.
  - **Management:** In addition, communication and consultation plans and processes show a high level of sensitivity to communication and consultation needs and approaches for various stakeholder groups and topics; and processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Stakeholder Engagement:** In addition, engagement is inclusive and participatory, and feedback on how issues raised have been taken into consideration has been thorough and timely.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.

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### Assessment Guidance:

**Stakeholders** are those who are interested in, involved in or affected by the hydropower project and associated activities.

**Stakeholder mapping** refers to identification and grouping of stakeholders in a meaningful way, for example based on stakeholder rights, risks and responsibilities. An example of “rights” would be land rights.

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**Directly Affected Stakeholders** are those stakeholders with substantial rights, risks and responsibilities in relation to the issue. These may be inside the project affected area (e.g. project affected communities) or outside the project-affected area (e.g. government regulators, finance institution representatives, or investment partners).

**Grievance mechanisms** refer to the processes by which stakeholders are able to raise concerns, grievances and legitimate complaints, as well as the project procedures to track and respond to any grievances.

**Needs and approaches for stakeholder groups** could include consideration of: cultural norms, gender, literacy level, vulnerable social groups, disabilities, logistical constraints, etc.

**Broad considerations within stakeholder mapping** could be with respect to, for example: the geographic or compositional extent of stakeholder groups identified and considered, the interrelationships amongst stakeholder groups, the level of vulnerability to adverse project impacts and risks; and level of consideration of rights, risks and responsibilities, etc.

**Potential interviewees:** project communications staff; project manager; stakeholder representatives; project affected communities representatives

**Examples of evidence:** project stakeholder mapping document; project communications and/or consultation plans; communications protocols; grievance mechanisms; monitoring reports

## I-2: Governance

This topic addresses corporate and external governance considerations for the operating hydropower facility. The intent 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, public sector corruption risks); and can ensure compliance.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Processes are in place to identify any ongoing or emerging political and public sector governance issues, and corporate governance requirements and issues, and to monitor if corporate governance measures are effective.
- **Management:** Processes are in place to manage corporate, political and public sector risks, compliance, social and environmental responsibility, procurement of goods and services, grievance mechanisms, ethical business practices, and transparency; policies and processes are communicated internally and externally as appropriate.
  - **Stakeholder Engagement:** The business interacts with a range of directly affected stakeholders to understand issues of interest to them; and the business makes significant project reports publicly available, and publicly reports on project performance, in some sustainability areas.
  - **Outcomes:** There are no significant unresolved corporate and external governance issues identified.
  - **Conformance/Compliance:** The project has no significant non-compliances.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, there are no significant opportunities for improvement in the assessment of political and public sector governance issues and corporate governance requirements and issues.

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- **Management:** In addition, contractors are required to meet or have consistent policies as the developer; procurement processes include anti-corruption measures as well as sustainability and anti-corruption criteria specified in pre-qualification screening; and processes are in place to anticipate and respond to emerging risks and opportunities.
- **Stakeholder Engagement:** In addition, the business makes significant project reports publicly available and publicly reports on project performance in sustainability areas of high interest to its stakeholders.
- **Outcomes:** In addition, there are no unresolved corporate and external governance issues identified.
- **Conformance/Compliance:** The project has no non-compliances.

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## Assessment Guidance:

**Governance** broadly refers to the combination of processes and structures that inform, direct, manage and monitor the activities of the project toward the achievement of its objectives.

**Corporate governance** is a term that refers broadly to the rules, processes, or laws by which businesses are operated, regulated, and controlled

**Corporate governance requirements** may include, for example: business administration, policies and processes, risk management, corporate social responsibility, ethical business practices, accountability and stakeholder relations, compliance, etc.

**Corporate governance issues** may relate to, for example: lack of capacity in key external institutional structures, policies and processes important to the project; public sector corruption risks; political risks; internal corruption risks; compliance; management of project risks; etc.

**External governance considerations** include legal, judicial, and institutional structures, processes and policies relevant to the project. Examples include: the executive, the legislature, political parties, anticorruption organizations, judiciary, grievance addressing mechanisms (e.g. the Ombudsman), specific civil service/public sector agencies, law enforcement agencies, Freedom of Information, media, local and national government, civil society, private sector, international institutions (e.g. some provide peer review of anti-corruption efforts), audit/oversight institutions, public contracting system, etc.

**Political risk** is a risk of financial loss or inability to conduct business faced by investors, corporations, and governments due to government policy changes, government action preventing entry of goods, expropriation or confiscation, currency inconvertibility, politically-motivated interference, government instability, or war.

**Corruption risks** may be within the business such as with how finances are managed, or within the public sector such as not addressing licence or permit violations. **Public sector corruption risks** during project preparation may include, for example, limited options considered, short-cutting of assessment / preparation requirements, or non-transparent approvals; and at the project implementation and operation may include, for example, a blind eye to licence and permit violations.

**Processes to ensure ethical business practices** could include, for example: a business Code of Ethics, an employee Code of Conduct, a business Integrity Pact, anti-bribery or anti-corruption policies and procedures for reporting and investigation, (such as Transparency International's Business Principles for Countering Bribery (BPCB), a whistle-blowing arrangement, etc.

**Procurement plans and processes** should address provision of a procurement policy, pre-qualification screening, bidding, awarding of contracts, anti-corruption measures, and mechanisms to respond to bidder complaints. Screening could be for, by way of example, quality, reputation, cost, contractor prior performance on meeting contractual obligations (time, cost, specifications), etc.

**Compliance** is with respect to all relevant laws, policies, permits, agreements, codes of practice and publicly stated commitments.

**Anti-corruption measures** examples include: open bidding contracting processes to be above a low threshold, contracting authority and its employees commit to an anti-corruption policy, project integrity pacts, mechanisms to report corruption and protect whistleblowers, confidentiality limited to legally protected information, etc.

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**Screening based on sustainability criteria** might encompass additional criteria which could include, by way of example, social, environmental, ethics, human rights, health and safety performance, preference and support to local suppliers where they meet other criteria, etc.

**Screening to address anti-corruption** might specify, by way of example, that companies tendering must have a code of conduct addressing anti-corruption.

**Potential interviewees:** a Board member; the project manager; business managers for corporate governance, compliance, internal audit, business risk; experts on public sector governance; other relevant third parties such as anti-corruption civil society organisations

**Examples of evidence:** business internal website and external website for vision, values, policies, structure, procedures, annual reports; assessment of public sector governance issues; internal audit reports; project compliance plan; reports to Board on ethical business practices and compliance; log of ethical business practices grievance; third party review reports; relevant documentation on public sector governance issues such as reports of Transparency International on National Integrity Systems (NIS) and the Corruption Perceptions Index (CPI)

## I-3: Environmental & Social Issues Management

This topic addresses the plans and processes for environmental and social issues management. The intent 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.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Environmental and social issues relevant to project implementation and operation have been identified through an assessment process, including evaluation of associated facilities, scoping of cumulative impacts, role and capacity of third parties, and impacts associated with primary suppliers, using appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** Processes are in place to ensure management of identified environmental and social issues, and to meet any environmental and social commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing environmental and social issues management; and the environmental and social impact assessment and key associated management plans are publicly disclosed.
  - **Stakeholder Engagement:** Ongoing processes are in place for stakeholders to raise issues and get feedback.
  - **Conformance/Compliance:** Processes and objectives in the environmental and social management plans have been and are on track to be met with no major non-compliances or non-conformances, and environmental and social commitments have been or are on track to be met.
  - **Outcomes:** Negative environmental and social impacts of the project are minimised and mitigated.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

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- 5 – **Assessment:** In addition, monitoring of environmental and social issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities; and plans and processes are embedded within an internationally recognised environmental management system which is third party verified, such as ISO 14001.
  - **Stakeholder Engagement:** In addition, feedback on how issues raised have been taken into consideration has been thorough and timely.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, negative environmental and social impacts are avoided, minimised, mitigated and fully compensated; and enhancements to pre-project environmental or social conditions or contributions to addressing issues beyond those impacts caused by the project are achieved or are on track to be achieved.

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## Assessment Guidance:

**Environmental and social issues** may include, for example: aquatic and terrestrial biodiversity, threatened species, critical habitats, ecosystem integrity and connectivity issues, water quality, erosion and sedimentation, project-affected communities, indigenous peoples, ethnic minorities, resettlement, cultural heritage (both physical and non-physical), and public health. During the project implementation stage, there is a particular need to monitor and manage waste, noise, dust, air quality, water quality, and hazardous materials directly arising from construction activities; secondary effects of construction and implementation activities on biodiversity, land stability, livelihoods, etc; as well as the implementation of particular environmental and social programs such as resettlement, cultural heritage, public health etc. Environmental and social issues associated with the project that extend beyond the jurisdictional boundaries in which the project is located would need to have been assessed and included in management plans.

**Associated facilities** are defined as those facilities that would not be constructed if the project did not exist, and where the project would not be viable without the other facility. These facilities may be funded, owned, constructed, and/or operated separately from the project, and in some cases, by third parties.

**Cumulative impacts** are the combined effects of multiple existing or reasonably foreseen projects or activities; the extent of the assessment, including the area of influence and timeframe of future projects, will range from basic scoping or identification of future projects that could lead to potential cumulative impacts to full strategic environmental assessment.

**Primary suppliers** are those first-tier suppliers who are providing goods or materials essential for the project.

**Appropriate expertise** refers to specialists with experience in the key identifiable topical areas of the assessment and management plans, giving particular attention to the differences between environmental areas and social impact areas.

**Inter-relationships amongst issues** refers to close attention to how monitoring findings from one stream of investigation may have implications for programs being implemented in other parts of the overall implementation program; an example could be that adverse water quality arising from construction works affects drinking water quality which affects public health and livelihoods.

**Potential interviewees:** project managers responsible for environmental and social issues assessment and management; government representatives responsible for environmental and social issues; stakeholder representatives; project affected communities representatives; external experts

**Examples of evidence:** regulatory requirements for EIA / SIA; EIA / SIA and associated reports; environmental and social management plans; hazardous material register listing type, quantities and storage locations HSE internal audits schedule, forms for reporting and non-compliances identification; waste generation and disposal register or equivalent document (including sources & volumes); records of consultation and stakeholder involvement; records of response to stakeholder issues; third party review report; qualifications of experts utilised; evidence of appropriate separate expertise used for environmental and social issues recognising that in many cases single experts may not have sufficient breadth of expertise to cover both aspects

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## I-4: Integrated Project Management

This topic addresses the developer's capacity to coordinate and manage all project components, taking into account project construction and future operation activities at all project-affected areas. The intent is that the project meets milestones across all components, delays in any component can be managed, and one component does not progress at the expense of another.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Monitoring of project progress, milestones, budget and interface issues, and of the effectiveness of management of implementation stage plans including construction management, is being undertaken on a regular basis during project implementation.
- **Management:** An integrated project management plan and processes are in place that take into account all project components and activities with no significant gaps; and a construction management plan is in place that describes processes that contractors and others are required to follow to manage construction related activities and risks.
  - **Conformance/Compliance:** Processes and objectives in the integrated project management plan and the construction management plan have been and are on track to be met with no major non-compliances or non-conformances.
  - **Outcomes:** The project is meeting overall budget and timing objectives and targets; interface issues are managed effectively; and identified construction risks are minimised and mitigated.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of the overall project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, the plan identifies a range of potential interface issues and sets out measures to manage interface and delay issues without impinging on overall project timetables and budgets; processes are in place to anticipate and respond to emerging risks and opportunities; and construction management plans ensure that land disturbance and waste generation activities will be managed so that later rehabilitation activities can be undertaken efficiently and effectively.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, interface issues are anticipated, and avoided or minimised; and identified construction risks are avoided, minimised, mitigated and fully compensated.

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### Assessment Guidance:

**Project components** refers to components of the overall hydropower development programme including design, construction, environmental, social, resettlement, finance, communications and procurement; examples include: design, construction, environmental, social, resettlement, finance, communications and procurement, etc.

**Integrated project management plan** examples of considerations include: scheduling, interface targets, significant path analysis, communications, cost control, etc.

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**Construction risks** examples include: safety, air, noise and water pollution, land contamination, land disturbance, water management, introduced species, health, migratory workforce/local community conflicts, etc.

**Construction management plan** examples of considerations include: chemical and waste storage and handling, pollution, land disturbance, health, safety, community relations, and site zoning for special area protection. The plans may be developed by the project managers, or by the contractors themselves.

**Interface issues** examples include: that the reservoir is starting to fill before resettlement is fully implemented; that construction activities impinge on significant cultural heritage sites; that the construction workforce introduces public health problems; that social migration into the project-affected area causes social problems for project-affected communities that then require additional management measures; that noise and dust from construction directly impacts on the effectiveness of implementation of biodiversity management plans; etc.

**Land disturbance and waste generation** activities in the implementation stage can incorporate many measures which are mindful of the later requirements for construction site restoration and rehabilitation; example include: stockpiling of topsoil, seed collection, location of works areas, quarries, spoil heaps below the future minimum water level, etc.

**Potential interviewees:** project manager; construction manager

**Examples of evidence:** organisational structure; management team qualifications; integrated programme management plans, analyses and reports; construction management plan; construction contracts; construction camp management plan; records of training for all contractors; contractors weekly monitoring reports

## I-5: Infrastructure Safety

This topic addresses management of dam and other infrastructure safety during project implementation and operation. The intent is that life, property and the environment are protected from the consequences of dam failure and other infrastructure safety risks.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Dam and other infrastructure safety risks relevant to project implementation and operation have been identified through an assessment process; and safety monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** 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, including providing for communication of public safety measures; a formal quality control program is in place for construction; safety management plans for the operation stage have developed in conjunction with relevant regulatory and local authorities; and emergency response plans include awareness and training programs and emergency response simulations.
  - **Conformance/Compliance:** Processes and objectives relating to safety have been and are on track to be met with no major non-compliances or non-conformances, and safety related commitments have been or are on track to be met.
  - **Outcomes:** Safety risks have been minimised and mitigated.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, consideration of safety issues takes into account a broad range of scenarios and both risks and opportunities.

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- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities; and **public** safety measures are widely communicated in a timely and accessible manner.
- **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
- **Outcomes:** Safety risks have been avoided, minimised and mitigated; and safety issues have been addressed beyond those risks caused by the project itself.

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## Assessment Guidance:

**Safety risks** examples include: seismic, geotechnical, dam or generation unit failure, electric shock, hydrological risk, drowning, road accidents, accidents arising from community interactions with project activities, etc. At the implementation stage, particular safety risks are those arising from construction activities such as use of heavy machinery, transport of goods and services, hazards due to adverse weather conditions, etc. Also at the implementation stage, poor quality of the actual construction is a major safety risk for the ongoing life of the project.

**Safety management measures** examples include: signage, exclusion zones, emergency preparedness, monitoring, inspections, training, incident response, communication, allocation of responsibilities, etc. One of the major safety measures for the project implementation period is **a formal quality control program for the actual construction.**

**Emergency response simulations** may be undertaken, for example, through training or workshop exercises for company staff, regional authorities, etc.

**Contributions to safety issues beyond project risks** might include, for example, improving the safety of some existing roads or traffic infrastructure, signage in public places about speeding or drowning risks, etc.

**Potential interviewees:** project manager; project designers; project safety manager; local authorities; stakeholder representatives; project affected community representatives

**Examples of evidence:** safety risk assessments; safety management plans; emergency preparedness plans; monitoring reports; independent reviews

## I-6: Financial Viability

This topic addresses project financial management, including funding of measures aimed at ensuring project sustainability, and the ability of the project to generate the required financial returns to meet project funding requirements. The intent is that the project is proceeding with a sound financial basis that covers all project funding requirements including social and environmental measures and commitments, financing for resettlement and livelihood enhancement, and delivery of project benefits to project affected communities.

### Scoring:

- 1 - *There are significant gaps relative to basic good practice.*
- 2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*
- 3 – **Assessment:** An assessment has been undertaken of project financial viability, including project costs and revenue streams, using recognised models and including risk assessment, scenario testing and sensitivity analyses; and monitoring of the financial situation during project implementation is being undertaken on a regular basis.
  - **Management:** Measures are in place for financial management of project implementation; plans are in place for financial management of the future operating hydropower facility.

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- **Conformance/Compliance:** Processes and objectives relating to financial management have been and are on track to be met with no major non-compliances or non-conformances, and funding commitments have been or are on track to be met.
- **Outcomes:** The project or the corporate entity to which it belongs can manage financial issues under a range of scenarios, can service its debt, and can pay for all social and environmental plans and commitments.

4 - All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.

- 5 – **Assessment:** In addition, project costs and revenue streams are fully detailed; and financial viability of the project has been analysed and optimised including extensive scenario testing, risk assessment and sensitivity analyses.
- **Management:** In addition, financial management plans provide for well-considered contingency measures for all environmental and social mitigation plans and commitments; and processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** The project can manage financial issues under a broad range of scenarios.

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## Assessment Guidance:

**Project costs** examples include: costs for construction, operations and maintenance, and includes equipment, supplies, labour, tax, land/water resource rights, and costs of environmental and social mitigation plans.

**Revenue streams** examples include: the electricity market, the Power Purchase Agreement, and revenue associated with investment drivers for new market entrants (e.g. access to carbon finance).

**Financial models** at a minimum have the project costs and revenue streams as inputs and financial returns as outputs; examples of uses include: examine implications of various market conditions, trends and risks on financial viability of the project through scenario testing, risk assessment, sensitivity analysis, etc.

(IHA:)**Financial issues and risks** examples include: very high project costs; inability to meet required costs; uncertainties with respect to revenue streams; currency exchange instability; difficulties in access to project finance; access to renewable incentive schemes; regional pricing; market stability; market access; likelihood of major inflation or depreciation; financial viability of the principal power off-takers etc.

**Measures for financial management** at the project implementation stage may include, for example: cash flow requirements; ensuring procurement of goods and services, and costs for implementation of construction, social and environmental management plans, stay within budget; ensuring adequate contingencies in budgets to cover emerging issues; handling claims and contingencies; liaison with investors and ensuring their information requirements and any conditions on the project are met; updating financial planning in light of any scheduling issues arising in relation to the date of commissioning; obtaining additional finance if required; etc.

**Financial viability** at the project level may be difficult to assess for certain types of projects whose financial contribution is measured from the perspective of the system within which it operates; for example, pump storage projects may run at a loss but enable a greater profit to be made from other power stations within the system because of the greater efficiencies gained.

Some financial information may have a high degree of commercial sensitivity, and evidence for this topic may need to be viewed under a confidentiality agreement.

**Potential interviewees:** project financial officers; corporate financial officers; principal financing institution representative; independent financial expert

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**Examples of evidence:** analysis of financing options; financial modelling reports; financial risk analysis; financial plans; financial status reports; third party review reports; annual financial reports for company, project, and principal off-taker(s)

## I-7: Project Benefits

This topic addresses the additional benefits that can arise from a hydropower project, and the sharing of benefits beyond one-time compensation payments or resettlement support for project affected communities. The intent is that opportunities for additional benefits and benefit sharing are evaluated and implemented, in dialogue with affected communities, so that benefits are delivered to communities affected by the project.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Opportunities to increase the development contribution of the project through additional benefits and/or benefit sharing have been assessed. In the case that commitments to additional benefits or benefit sharing have been made, monitoring is being undertaken on delivery of these commitments.
- **Management:** Measures are in place to deliver commitments by the project to additional benefits or benefit sharing; and commitments to project benefits are publicly disclosed.
  - **Conformance/Compliance:** Processes and objectives relating to project benefits have been and are on track to be met with no major non-compliances or non-conformances, and any additional benefits or benefit sharing commitments have been or are on track to be met.
  - **Outcomes:** Communities directly affected by the development of the hydropower project have received or are on track to receive benefits.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, the assessment of delivery of project benefits takes into consideration both risks and opportunities.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, benefits are significant and the project has delivered or is on track to deliver significant and sustained benefits for communities affected by the project.

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### Assessment Guidance:

**Topic relevance:** This topic is always relevant. If no commitments have been made to project benefits, then the Assessment and Outcomes criteria apply. If commitments have been made to project benefits, then all criteria apply.

**Benefits** may take the form of additional benefits, or benefit-sharing strategies.

**Additional benefits** refers to benefits that can be leveraged from the project; examples include: capacity building, training and local employment; infrastructure such as bridges, access roads, boat ramps; improved services such as for health and education; support for other water usages such as

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irrigation, navigation, flood/drought control, aquaculture, leisure; increased water availability for industrial and municipal water supply; benefits through integrated water resource management; etc.

**Benefit sharing** is distinct from one-time compensation payments or resettlement support; examples include:

- equitable access to electricity services – project affected communities are among the first to be able to access the benefits of electricity services from the project, subject to contextual constraints (e.g. power safety, preference);
- non-monetary entitlements to enhance resource access – project affected communities receive enhanced local access to natural resources;
- revenue sharing – project affected communities share the direct monetary benefits of hydropower according to a formula and approach defined in regulations; this goes beyond a one-time compensation payment or short-term resettlement support; and trust funds.

**Commitments** to additional benefits or benefit sharing may be the responsibility of other agencies and not the project developer.

Some information on project benefits may have a high degree of commercial sensitivity, and evidence for this topic may need to be viewed under a confidentiality agreement.

**Potential interviewees:** project manager; government representative (e.g. department of economic development); stakeholder representatives; project affected communities representatives

**Examples of evidence:** analysis of relevant development indicators; analysis of potential project benefits; analysis of benefit sharing options and opportunities; meeting minutes or reports demonstrating stakeholder input and involvement; benefit sharing plan; monitoring

## I-8: Procurement

This topic addresses all project-related procurement including works, goods and services. The intent is that procurement processes are equitable, transparent and accountable; support achievement of project timeline, quality and budgetary milestones; support developer and contractor environmental, social and ethical performance; and promote opportunities for local industries.

### Scoring:

- 1 - *There are significant gaps relative to basic good practice.*
- 2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*
- 3 – **Assessment:** Major supply needs, supply sources, relevant legislation and guidelines, supply chain risks and corruption risks have been identified through an assessment process; ongoing monitoring is being undertaken to monitor effectiveness of procurement plans and processes.
  - **Management:** 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.
  - **Conformance/Compliance:** Processes and objectives relating to procurement have been and are on track to be met with no major non-compliances or non-conformances, and any procurement related commitments have been or are on track to be met.
  - **Outcomes:** Procurement of works, goods and services across major project components is equitable, efficient, transparent, accountable, ethical and timely, and contracts are progressing or have been concluded within budget or that changes on contracts are clearly justifiable.
- 4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

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- 5 – **Assessment:** In addition, the assessment includes opportunities for local suppliers and local capacity development.
  - **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities; sustainability and anti-corruption criteria are specified in the pre-qualification screening; and anti-corruption measures are strongly emphasised in procurement planning processes.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, opportunities for local suppliers including initiatives for local capacity development have been delivered or are on track to be delivered.

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## Assessment Guidance:

**Major supply needs** examples include: design, economic, financial, technical, environmental and social consultancies; contractors for project construction works; supply of major goods and complex control equipment for project construction, etc.

**Supply chain risks** relate to inability to meet the contract provisions (e.g. with respect to cost, time, quality, specifications), corruption, transport impediments, human rights (e.g. child labour, forced labour used by suppliers of suppliers), etc.

**Corruption risks** at the contracting / bid evaluation stage examples include: non-transparent prequalification, confusing tender documents, non-transparent or non-objective selection procedures, bid clarifications not shared with other bidders, award decisions not made public, or not justified, deception and collusion, unjustified agents' fees, conflicts of interest of officials and consultants, etc.

**Procurement plans and processes** should address provision of a procurement policy, pre-qualification screening, bidding, awarding of contracts, anti-corruption measures, and mechanisms to respond to bidder complaints.

**Screening** could be for, by way of example, quality, reputation, cost, contractor prior performance on meeting contractual obligations (time, cost, specifications), etc.

**Contracts** have already been awarded during the project preparation stage for investigations, design, environmental and social impact assessments, etc. If contracts have not been concluded within budget, evidence should be provided to show that the changes on contracts are clearly justifiable.

**Screening based on sustainability criteria** might encompass additional criteria which could include, by way of example, social, environmental, ethics, human rights, health and safety performance, preference and support to local suppliers where they meet other criteria, etc.

**Procurement opportunities** may relate to new suppliers, new technologies, capacity development opportunities through liaising with government economic development initiatives, grants, R&D initiatives, contractual arrangements, etc.

**Local suppliers** are those within the geographic proximity of the project-affected area who can or have the potential to meet the need to deliver required good and services; the definition of 'local' will be context specific (e.g. those in the project affected area or local government district).

**Local capacity development** refers to assistance that is provided to entities in the proximity of the project which have an identified need to develop a certain skill or competence or general upgrading of performance ability in order to meet or deliver a desired service.

**Screening to address anti-corruption** might specify, by way of example, that companies tendering must have a code of conduct addressing anti-corruption.

**Anti-corruption measures** examples include: open bidding contracting processes to be above a low threshold, contracting authority and its employees commit to an anti-corruption policy, project integrity pacts, mechanisms to report corruption and protect whistleblowers, confidentiality limited to legally protected information, etc.

**Potential interviewees:** project manager; project procurement officer; representative of an anti-corruption NGO

**Examples of evidence:** relevant purchasing policy and procedures; project procurement plan; analysis of local supply sources and capacities; tender requirements / specifications; bidding documents; supplier screening criteria; evaluation of supplier performance; bidder grievance log; record of compliance with relevant legislation and guidelines including those of financing agencies; monitoring or third party review reports

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## I-9: Project-Affected Communities & Livelihoods

This topic addresses impacts of the project on project affected communities, in relation to economic displacement, impacts on livelihoods and living standards, and impacts to rights, risks and opportunities of those affected by the project. The intent is that livelihoods impacted by the project are **restored with the aim of self-sufficiency in the long-term, that living standards** are improved relative to pre-project conditions for project affected communities, and that commitments to project affected communities are fully delivered.

Topics I-10 'Resettlement' and I-11 'Indigenous Peoples' that follow specifically address two sub-sets of project affected communities.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Issues relating to project affected communities have been identified through an assessment process utilising local knowledge; and monitoring of project impacts and effectiveness of management measures is being undertaken during project implementation appropriate to the identified issues.
- **Management:** Measures are in place to address identified issues **that affect** project affected communities, and to meet commitments made to address these issues; and if there are any formal agreements with project affected communities these are publicly disclosed.
  - **Stakeholder Engagement:** Ongoing processes are in place for project affected communities to raise issues and get feedback.
  - **Conformance/Compliance:** Processes and objectives relating to project affected communities issues have been and are on track to be met with no major non-compliances or non-conformances, and commitments have been or are on track to be met.
  - **Outcomes:** Livelihoods that are impacted by the project have been or are on track to be **restored, living standards** impacted by the project have been or are on track to be improved, and economic displacement is fairly compensated.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of project-affected communities issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Stakeholder Engagement:** In addition, feedback on how issues raised are taken into consideration is thorough and timely, and project affected communities have been involved in decision-making around relevant issues and options.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, the improvement in living standards and measures put in place **to restore livelihoods are on track to promote self-sufficiency in the long-term.**

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### Assessment Guidance:

**Project affected communities** are the interacting population of various kinds of individuals in the

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area surrounding the hydropower project who are affected either positively or negatively by the hydropower project and its associated infrastructure.

**Issues that affect project affected communities** may include, for example: loss or constraints on livelihoods, lowering of living standards, or economic displacement brought about due to changes associated with the project such as changes to river management and flow regimes. Specific examples could include: impacts on health or safety; impacts on cultural practices; impacts on lands, forest and riverbanks; loss of paddy lands, of home gardens, of riverbank gardens; loss of access to sacred sites, to community forest etc. In cases the impacts may result in project affected communities needing to move, but they may not be considered part of the resettlement community because the physical resettlement was a secondary impact and not a primary impact of the project.

**Livelihood** refers to the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. **Restoration of livelihoods** refers to compensatory measures taken to address impacts of the project on pre-project livelihoods so that those affected are able to move forward with viable livelihoods; for example supporting farmers to continue to be able to farm or to pursue alternatives, accompanied by sufficient support mechanisms to enable any changes to livelihoods to be well-established for those affected.

**Living standards** refer to the level of material comfort as measured by the goods, services, and luxuries available to an individual, group, or nation; indicators of household well-being examples include: consumption, income, savings, employment, health, education, nutrition, housing, and access to electricity, clean water, sanitation, health services, educational services, transport, etc.

**Improvement in living standards** would be demonstrated by improvement in the indicators of the level of material comfort.

**Economic displacement** refers to the loss of assets, access to assets, or income sources or means of livelihoods as a result of (i) acquisition of land, (ii) changes in land use or access to land, (iii) restriction on land use or access to natural resources including water resources, legally designated parks, protected areas or restricted access areas such as reservoir catchments and (iv) changes in environment leading to health concerns or impacts on livelihoods. Economic displacement applies whether such losses and restrictions are full or partial, and permanent or temporary.

**Measures to address project affected communities issues** may include, for example: works to protect downstream riparian lands; downstream flow regime agreements to enable sustained livelihoods for downstream communities; access agreements to project lands to enable continued access to sacred sites, community forest, traditional medicinal plants; support for new industries; protection of sacred sites; etc.

**Opportunities for project-affected communities** may include, for example: training and capacity building; education; health services; employment; transportation; contributions to provide for cultural traditions or events, etc.

**Interrelationships amongst issues** may include, for example: erosion of riverbanks downstream of the project causing incremental and long-term loss of land essential to sustain livelihoods, or safety concerns due to rapidly fluctuating river flows downstream of the project causing riparian communities to feel unsafe and eventually having to relocate.

**Potential interviewees:** representatives of project affected communities; project social issues manager; government expert; independent experts

**Examples of evidence:** assessment report on project affected communities and livelihoods; gender analysis; human rights issues analysis; records of consultation and project affected community involvement; records of response to project affected community issues; third party review report; report on compensation measures; agreements on compensation measures; assessments and agreements on cultural sensitive areas and customs

## I-10: Resettlement

This topic addresses physical displacement arising from a hydropower project development. The intent 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 standards of living for resettles and host communities are improved; and that commitments made to resettles are fully delivered.

Scoring:

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1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** An assessment of the resettlement implications of the project has been undertaken that establishes the pre-project socio-economic baseline for resettles and host communities; monitoring is being undertaken of implementation of the resettlement plans, and to see if commitments made to resettles and host communities have been delivered and are effective and to identify any ongoing or emerging issues.
- **Management:** Measures to address resettlement are documented in a Resettlement Action Plan; measures are in place to deliver commitments to resettles and host communities, and to manage any identified issues relating to resettlement, including provision of grievance mechanisms; and formal agreements with resettles and host communities are publicly disclosed.
  - **Stakeholder Engagement:** Ongoing processes are in place for resettles and host communities to raise issues and get feedback.
  - **Conformance/Compliance:** Processes and objectives in the Resettlement Action Plan have been and are on track to be met with no major non-compliances or non-conformances, and any resettlement related commitments have been or are on track to be met.
  - **Outcomes:** Resettlement has been and is being treated in a fair and equitable manner, and resettles and host communities have experienced or are on track to experience a timely improvement in living standards relative to the pre-project baseline.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, the assessment of delivery of commitments to resettles and host communities takes into consideration both risks and opportunities.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Stakeholder Engagement:** In addition, feedback on how issues raised have been taken into consideration has been thorough and timely, and resettles and host communities have been involved in decision-making around relevant issues and options.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, **the measures put in place to improve living standards are on track to promote self-sufficiency in the long-term.**

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## Assessment Guidance:

**Topic relevance:** This topic will not be relevant if there is no requirement for resettlement arising from the project activities.

**Resettlement** is the process of moving people to a different place to live, because due to the project they are no longer allowed to stay in the area where they used to live.

**Living standards** refer to the level of material comfort as measured by the goods, services, and luxuries available to an individual, group, or nation; indicators of household well-being examples include: consumption, income, savings, employment, health, education, nutrition, housing, and access to electricity, clean water, sanitation, health services, educational services, transport, etc.

**Resettles** are those people who are required to be resettled, and including those who have formal legal rights, customary or traditional rights, as well as those who have no recognizable rights to the

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land.

**Host communities** refers to the communities to which resettles are relocated.

**The socio-economic baseline for resettlement** would include analysis of community structures, gender, vulnerable social groups, living standards, and economic valuation of livelihoods and asset loss.

**Resettlement Action Plan** refers to a document or set of documents specifically developed to identify the actions that will be taken to address resettlement. It would typically include identification of those being resettled; the socio-economic baseline for the resettles; the measures to be implemented as part of the resettlement process including those relating to resettlement assistance and livelihood support; the legal and compensation frameworks; organisational roles and responsibilities; budget allocation and financial management; the timeframe, objectives and targets; grievance redress mechanisms; monitoring, reporting and review provisions; and understandings around consultation, participation and information exchange.

**Grievance mechanisms** refer to the processes by which stakeholders are able to raise concerns, grievances and legitimate complaints, as well as the project procedures to track and respond to any grievances.

**Potential interviewees:** community representatives affected by resettlement and land acquisition; representatives from resettlement host communities; project social issues manager; representative from the responsible governmental authority; independent reviewer

**Examples of evidence:** assessment report on resettlement and land acquisition; records of consultation and affected stakeholder involvement; records of response to resettlement and land acquisition issues; third party review report; resettlement action plans; land acquisition plans; compensation agreements; agreements on resettlement action plan; baseline social conditions report; livelihood analysis; impoverishment risk analysis; mitigation, resettlement and development action plans, including project benefit sharing mechanisms; NGO reports; monitoring reports

## I-11: Indigenous Peoples

This topic addresses the rights, risks 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 marginalized and vulnerable segments of the population. The intent 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.

### Scoring:

- 1 - *There are significant gaps relative to basic good practice.*
- 2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*
- 3 – **Assessment:** Issues that may affect indigenous peoples in relation to the project have been identified through an assessment process utilising local knowledge; and monitoring of project impacts and effectiveness of management measures is being undertaken during project implementation appropriate to the identified issues.
  - **Management:** Measures are in place to address identified issues that may affect indigenous peoples in relation to the project, and to meet commitments made to address these issues; and formal agreements with indigenous peoples are publicly disclosed.
  - **Stakeholder Engagement:** Ongoing and mutually agreed processes are in place for indigenous peoples to raise issues and get feedback.
  - **Conformance/Compliance:** Processes and objectives relating to issues that may affect indigenous peoples have been and are on track to be met with no major non-compliances or non-conformances, and any indigenous peoples related commitments have been or are on track to be met.

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- **Outcomes:** Plans provide for major negative impacts of the project to indigenous peoples and their associated culture, knowledge, access to land and resources, and practices to be avoided, minimised, mitigated or compensated, and some practicable opportunities for positive impacts to be achieved.

*4 - All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, identification of issues that may affect indigenous peoples is undertaken with the free, prior and informed participation of indigenous peoples; and monitoring during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, measures for issues that may affect indigenous peoples have been developed with the free, prior and informed participation of indigenous peoples; and processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Stakeholder Engagement:** In addition, feedback on how issues raised have been taken into consideration has been thorough and timely; and directly affected indigenous peoples have been involved in decision-making around relevant issues and options.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, opportunities for positive impacts have been thoroughly identified and maximised as far as practicable.

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## Assessment Guidance:

**Topic relevance:** This topic will not be relevant if credible evidence provided shows that there are no indigenous peoples in the project affected area.

**Indigenous peoples** refers to a distinct social and cultural group possessing the following characteristics in varying degrees: self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; customary cultural, economic, social or political institutions that are separate from those of the dominant society or culture; an indigenous language, often different from the official language of the country or part of the country within which they reside. **Individual countries may have laws regarding indigenous peoples which must be complied with.**

**Issues that may affect indigenous peoples** are ideally self-identified, and may include, for example: impacts of project activities and infrastructure on cultural practices, direct or indirect impacts to traditional lands, impacts to community cohesion, public health risks, disturbance of customary practices, and impeded access to natural resource-based livelihoods.

**Measures to address issues that may affect indigenous peoples** are ideally self-identified, and may include, for example: avoidance measures, protection of cultural practices, land entitlement and protection, health assistance, scheduling of project activities to not disturb customary practices, support for festivals or traditions, improved or more secure access to natural resource-based livelihoods, etc.

**Potential interviewees:** representatives of project affected indigenous communities; project social issues manager; independent reviewer; **representative from the responsible governmental authority**

**Examples of evidence:** assessment report on indigenous peoples; records of consultation and project affected community involvement; records of response to issues that may affect indigenous peoples; third party review report; indigenous peoples management plans; agreements on measures for indigenous peoples; monitoring reports

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## I-12: Labour & Working Conditions

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

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Human resources and labour management requirements have been identified through an assessment process, including occupational health and safety (OH&S) issues and risks; and processes are in place to identify any emerging or ongoing issues, and to monitor if management measures are effective.
- **Management:** Human resource and labour management policies, plans and processes are in place that address all labour management planning components, including those of contractors, subcontractors, and intermediaries, with no significant gaps.
  - **Stakeholder Engagement:** Ongoing processes are in place for employees and contractors to raise human resources and labour management issues and get feedback.
  - **Conformance/Compliance:** Processes and objectives relating to human resource and labour management have been and are on track to be met with no major non-compliances or non-conformances, and any labour related commitments have been or are on track to be met.
  - **Outcomes:** The project can demonstrate fair treatment of workers, equal opportunity, fair and just compensation, staff development and training, and a safe workplace.

4 - *All elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, the assessment takes broad considerations into account, and both risks and opportunities.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Stakeholder Engagement:** In addition, feedback on how issues raised have been taken into consideration has been thorough and timely.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, there are no identified inconsistencies of labour management policies and practices with internationally recognised labour rights.

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### Assessment Guidance:

**Labour management planning components** include: human resources policies, staff and workforce planning, occupational health and safety, equal opportunity, staff development and training, grievance mechanisms, and (where appropriate) collective bargaining mechanisms

**Occupational health and safety** is about protecting the safety, health and welfare of people engaged in work or employment, for example through preventing disease or injury that might arise as a direct result of the workplace activities.

**Broad considerations** might be exhibited by, for example: a broad view of relevant issues; a broad approach to types of data collection and important indicators; a focus on interrelationships amongst

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issues; a broad analysis of trends, approaches and existing and emerging standards relating to labour and working conditions; understanding of relevant human rights; etc.

**Internationally recognised labour rights** include freedom of association, right to equal pay for equal work, right to organize and participate in collective bargaining, right to equality at work, right to non-discrimination, right to just and favourable remuneration, abolition of slavery and forced labour, right to a safe work environment, abolition of child labour, right to rest and leisure, right to work, right to family life. Evidence would be no policies or practices that show workers are prevented from the ability to exercise these rights.

**Potential interviewees:** project human resources staff; company human resources staff; project manager, contracted workforce manager, project safety officer; staff or contractor representatives; external experts; unions and shop stewards; female workers

**Examples of evidence:** policies, plans and programs relating to human resources, employees, contractors, equity, occupational health & safety, workforce planning, and grievance mechanisms; national and international standards for labour and OH&S; HSE monitoring records, including accident and incident investigation reports and investigation procedures

## I-13: Cultural Heritage

This topic addresses cultural heritage, with specific reference to physical cultural resources, associated with the hydropower facility. The intent 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.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Cultural heritage issues, with respect to physical cultural resources, that are relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** Processes are in place to ensure management of identified cultural heritage issues, and to meet commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing cultural heritage issues management.
  - **Conformance/Compliance:** Processes and objectives in place to manage cultural heritage issues have been and are on track to be met with no significant non-compliances or non-conformances, and cultural heritage related commitments have been or are on track to be met.
  - **Outcomes:** Negative cultural heritage impacts arising from project implementation are minimised, mitigated and compensated.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of cultural heritage issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.

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- **Outcomes:** In addition, negative cultural heritage impacts arising from project implementation are avoided, minimised, mitigated and fully compensated; and contributions to addressing cultural heritage issues beyond those impacts caused by the project are achieved or are on track to be achieved.

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## Assessment Guidance:

**Topic relevance:** This topic will not be relevant if credible evidence provided shows that there were no physical cultural resources identified in the project-affected area, and that there are no physical cultural resources identified in the area affected by the operating hydropower facility.

**Cultural heritage** refers to the legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations.

**Physical cultural resources** refer to movable or immovable objects, sites, structures, groups of structures, and natural features and landscapes that have archaeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance. Physical cultural resources may be located in urban or rural settings, and may be above or below ground, or under water. Their cultural interest may be at the local, provincial or national level, or within the international community.

**Non-physical cultural heritage** examples include: traditions, festivals, rituals, folklore, storytelling, drama, etc. If of relevance, these should be addressed under Topic I-3 Environmental & Social Issues Management in this Protocol assessment.

**Cultural heritage issues** may include, for example: inundation of important sites or artefacts under the new reservoir; damage or destruction to important sites or artefacts due to construction activities; loss of access to important sites due to changes to access routes (e.g. new canals or linear infrastructure with barrier fencing, major roads); disturbance of spirits associated with special sites; etc.

**Processes to manage cultural heritage issues** may include, for example: documentation and record-keeping; relocation; creation of protected areas; new access routes; appeasement ceremonies; etc.

**Protection** means to keep in safety and protect from harm, decay, loss, damage or destruction.

**Interrelationships amongst issues** could include, for example, erosion and sedimentation effects on important heritage locations, risks of vandalism or theft by contractors or the public, etc.

**Cultural heritage opportunities** may include, for example: partnerships with heritage organisations; establishment of initiatives recognising heritage values such as festivals, museums or visiting experts; programmes to preserve traditional activities; access to special grants for heritage protection works; exhibits; educational initiatives; etc.

**Potential interviewees:** project environmental and social issues manager, local cultural heritage expert, representative from relevant government department (e.g. heritage or environment); external experts; project affected community representatives

**Examples of evidence:** cultural heritage impact statements; conservation plans; records of consultation and response to stakeholder issues; heritage plans and agreements; national and international standards; monitoring and inspection reports; record of training of employees on chance find procedure

## **I-14: Public Health**

This topic addresses public health issues associated with the hydropower project. The intent is that the project does not create or exacerbate any public health issues, that improvements in public health are achieved through the project in project-affected areas where there are significant pre-existing public health issues, and that commitments made by the project to implement public health measures are fulfilled.

### Scoring:

1 - There are significant gaps relative to basic good practice.

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2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Public health issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** Processes are in place to ensure management of identified public health issues, and to meet commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing public health issues management including hand-over to local authorities as appropriate.
  - **Conformance/Compliance:** Processes and objectives in place to manage public health issues have been and are on track to be met with no significant non-compliances or non-conformances, and public health related commitments have been or are on track to be met.
  - **Outcomes:** Negative public health impacts arising from project activities are minimised and mitigated.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of public health issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities for different community groups that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, negative public health impacts arising from project implementation are avoided, minimised, mitigated and fully compensated; and enhancements to pre-project public health conditions or contributions to addressing public health issues beyond those impacts caused by the project are achieved or are on track to be achieved.

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## Assessment Guidance:

**Topic relevance:** This topic will always be relevant, because even in with the case in which there are no individuals or communities living in the project affected area, there will be residents in the area due to the new project and issues, risks and opportunities should be identified and planned for

**Public health issues** examples include: disease introduced by construction workforce (e.g. HIV, Aids); vector borne diseases (e.g. malaria, schistosomiasis); communicable and non-communicable diseases, malnutrition, psychological disorders, social well-being; loss or contamination of traditional resources; mercury or heavy metal bio-accumulation; etc.

**Risks and opportunities for different community groups** could be with respect to, for example: gender, age, ethnicity, use of and access to traditional medicines, etc.

**Public health opportunities** examples include: improved access to electricity, clean water and sanitation; development or upgrading of public health facilities; provision of equipment, training, health education, immunisations; increased access to low-cost, high-quality protein diet through increased availability of fish, etc.

**Health needs, issues and risks for different community groups** would be with respect to, for example: gender, age, ethnicity, use of and access to traditional medicines, etc.

**Public health management measures** examples include: measures to reduce mosquito-borne disease risks; storing of medical supplies and immunisations; educational, awareness and disease prevention training; water quality testing; etc.

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**Potential interviewees:** project social issues manager, independent public health expert, representative from government health department, project affected community representatives

**Examples of evidence:** public health issues and opportunities assessment; public health management plans; national and international standards; regional statistics

## I-15: Biodiversity & Invasive Species

This topic 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 intent 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.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Biodiversity issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** Processes are in place to ensure management of identified biodiversity issues, and to meet commitments, relevant to the project implementation stage; and plans are in place for the operation stage for ongoing biodiversity issues management.
  - **Conformance/Compliance:** Processes and objectives in place to manage biodiversity issues have been and are on track to be met with no significant non-compliances or non-conformances, and biodiversity related commitments have been or are on track to be met.
  - **Outcomes:** Negative biodiversity impacts arising from project activities are minimised, mitigated, and compensated or offset.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of biodiversity issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, negative biodiversity impacts arising from project implementation are avoided, minimised, mitigated and fully compensated; and enhancements to pre-project biodiversity conditions or contribution to addressing biodiversity issues beyond those impacts caused by the project are achieved or are on track to be achieved.

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Assessment Guidance:

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**Biodiversity issues** may include, for example: loss of habitat; fish migration barriers; loss of spawning grounds; loss of habitat connectivity; loss or declines in important food chain species; loss of wetlands; poaching, hunting or over-exploitation of significant species; introduction of weed or pest species; etc.

**Measures to address biodiversity** may include, for example: catchment protection, creation of reserves, habitat conservation and improvement, species management plans, translocations, habitat rehabilitation, new habitat creation, managed flow releases, etc. Measures to address passage of aquatic species may include, for example: fish ladders, fish elevators, catch and release programs, fish hatcheries, re-stocking programs, mechanisms for diversion away from turbines for downstream passage, assisted cues (water chemistry, operational conditions), etc. Measures to address invasive species may include, for example: physical barriers to pest species passage, pollution control, physical removal or containment, chemical treatment, reservoir water residence times, managed flow releases, etc.

**Biodiversity opportunities** may include, for example, forming partnerships with wildlife protection groups; catchment management committees and projects; joint research ventures around fish passage or hatcheries; employing or working with local communities to act as wardens for protected areas; creation of business ventures from non-timber forest resources, capacity building and educational initiatives, eco-tourism ventures, creation of bird and waterfowl sanctuaries, fish protection zones, wetland protection, etc.

**Potential interviewees:** project environmental issues manager; aquatic and terrestrial ecologists; project design engineers (in relation to fish passage); representatives of relevant government departments (e.g. fisheries, wildlife, environment, forests); representatives of local communities; independent experts

**Examples of evidence:** assessment of terrestrial biodiversity; assessment of aquatic biodiversity; fish studies; fish passage technical feasibility assessments; third party review reports; biodiversity management plans; invasive species management plans; commitments and agreements; economic and livelihood valuation from fish catch and non-timber forest products baselines from local communities; monitoring reports

## I-16: Erosion & Sedimentation

This topic addresses the management of erosion and sedimentation issues associated with the project. The intent is that erosion and sedimentation caused by the project is managed responsibly and does not present problems with respect to other social, environmental and economic objectives; that external erosion or sedimentation occurrences which may have impacts on the project are recognised and managed; and that commitments to implement measures to address erosion and sedimentation are fulfilled.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Erosion and sedimentation issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** Processes are in place to ensure management of identified erosion and sedimentation issues, and to meet commitments, relevant to the project implementation stage; plans are in place for the operation stage for ongoing erosion and sedimentation issues management.
  - **Conformance/Compliance:** Processes and objectives in place to manage erosion and sedimentation issues have been and are on track to be met with no significant non-compliances or non-conformances, and erosion and sedimentation related commitments have been or are on track to be met.

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- **Outcomes:** Erosion and sedimentation issues during project implementation are minimised and mitigated.

4 - All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.

- 5 – **Assessment:** In addition, monitoring of erosion and sedimentation issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, erosion and sedimentation issues during project implementation are avoided, minimised, mitigated and fully compensated; and enhancements to pre-project erosion and sedimentation conditions or contribution to addressing erosion and sedimentation issues beyond those impacts caused by the project are achieved or are on track to be achieved.

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## Assessment Guidance:

**Erosion and sedimentation issues** include impacts that may be caused by project construction and other implementation activities, and issues that may impact on the project over its life. Impacts that may be caused by project implementation may include direct land disturbance due to construction activities, or indirect land disturbances such as landslips arising from blasting. Consideration of what is an issue needs to take into account that there will be landscape adjustments brought about by the hydropower project that continue for many years until a new equilibrium is reached, particularly in the downstream river channels; negative impacts would therefore be considered those erosion and sedimentation occurrences caused by the project that present problems with respect to other social, environmental and/or economic objectives, or externally caused occurrences of erosion or sedimentation that impact on the ability of the project to meet its own social, environmental or economic objectives.

**Issues that may impact on the project over its life** might, for example, be naturally high sediment loads which may impact on the reservoir life, wear & tear of turbines, increased maintenance needs for tunnels, canals and other water conduits; or landslips or land disturbances due to other catchment activities or natural events that could increase sediment loads into the reservoir or adversely affect transport routes, etc.

**Measures to address erosion and sedimentation issues** might include, for example: catchment treatment works such as sediment check structures; water management measures such as to avoid turbidity or shoreline erosion; reforestation and re-vegetation activities; measures to address land use practices; etc.

**Erosion and sedimentation opportunities** may include, for example, forming partnerships with land-use protection or catchment management groups; joint research projects around erosion or sedimentation management; new technologies; carbon credits for reforestation with benefits of erosion and sedimentation risk reduction; etc.

**Potential interviewees:** project environmental manager; government representative (e.g. from environment department), independent expert

**Examples of evidence:** erosion and sedimentation assessment reports; erosion and sedimentation management plans for construction and operation; records of monitoring of surface waters

## I-17: Water Quality

This topic addresses the management of water quality issues associated with the project. The intent is that water quality in the vicinity of the project is of a high quality and not adversely impacted by project activities; that water quality issues are monitored and

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addressed as required; and commitments to implement measures to address water quality are fulfilled.

## Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Water quality issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** Processes are in place to ensure management of identified water quality issues, and to meet commitments, relevant to the project implementation stage; and plans are in place for the operation stage for ongoing water quality issues management.
  - **Conformance/Compliance:** Processes and objectives in place to manage water quality issues have been and are on track to be met with no significant non-compliances or non-conformances, and water quality related commitments have been or are on track to be met.
  - **Outcomes:** Negative water quality impacts arising from project activities are minimised and mitigated.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of water quality issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, negative water quality impacts arising from project implementation are avoided, minimised, mitigated and fully compensated; and enhancements to pre-project water quality conditions or contribution to addressing water quality issues beyond those impacts caused by the project are achieved or are on track to be achieved.

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## Assessment Guidance:

**Water quality issues** examples at the construction stage include: turbidity, elevated nutrients, pollutants from construction activity such as oil, chemical or lubricant spills, etc. River pollution during construction is generically addressed by this topic and is often detected by water quality monitoring. A water quality issue during construction could be elevated turbidity levels caused by erosion or soil disturbance issues, in which case there is overlap with Topic I-16 and it may be best addressed by erosion plans. It could be elevated nutrient levels caused by sewage problems, in which case there is overlap with Topic I-18 and it is best addressed in waste management plans. This topic also covers planning for water quality issues at the operation stage, which could include for example: reduced oxygenation, aseasonal temperatures, stratification potential, pollutant inflow, nutrient capture, algal bloom potential, release of toxicants from inundated sediments, etc.

**Measures to address water quality** at the construction stage are often oriented around avoidance or mitigation of spot issues e.g. oil bunding, sediment traps, etc. At the operation stage the measures are often longer-term and may be built into design features; they may include, for example: design features such as a multi-level off-take; water management measures such as to ensure adequate

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water circulation and through-flow; vegetation management to address organic decomposition; addressing pollutants from non-project activities such as sewage, wastes, contaminated sites, etc.

**Monitoring for water quality** may be built into other plans and processes, e.g. visual inspections undertaken for operational purposes.

**Water quality opportunities** may include, for example: addressing pollutants from non-project activities such as sewage, wastes, contaminated sites; groundwater stabilisation, improved water quality through oxygenation or temperature dispersion; new technologies; new service providers; partnerships with community waterway health monitoring groups; participating in or forming catchment management groups to address water quality issues at the catchment level; etc.

**Potential interviewees:** project environmental manager; government representative (e.g. from environment department), independent expert

**Examples of evidence:** water quality monitoring reports; water quality management plans for construction and operation

## I-18: Waste, Noise & Air Quality

This topic addresses the management of waste, noise and air quality issues associated with the project. The intent is that noise and air quality in the vicinity of the project are of a high quality and not adversely impacted by project activities, and that project wastes are responsibly managed.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** Waste, noise and air quality issues relevant to project implementation and operation have been identified through an assessment process utilising appropriate expertise; and monitoring is being undertaken during the project implementation stage appropriate to the identified issues.
- **Management:** Processes are in place to ensure management of identified waste, noise and air quality issues, and to meet commitments, relevant to the project implementation stage; and plans are in place for the operation stage for ongoing waste management.
  - **Conformance/Compliance:** Processes and objectives relating to waste, noise and air quality have been and are on track to be met with no significant non-compliances or non-conformances, and any related commitments have been or are on track to be met.
  - **Outcomes:** Negative noise and air quality impacts arising from project activities are minimised and mitigated, and project wastes managed responsibly.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of waste, noise and air quality issues during project implementation takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
  - **Outcomes:** In addition, negative noise and air quality impacts arising from project activities are avoided, minimised, mitigated and fully compensated; project wastes are

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managed responsibly; and the project contributes to addressing waste management issues beyond those impacts caused by the project.

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## Assessment Guidance:

**Potential interviewees:** project environmental manager; government representative (e.g. from environment department), independent expert

**Examples of evidence:** waste, noise and air quality monitoring reports; waste, noise and air quality management plans for construction and operation

## I-19: Reservoir Preparation & Filling

This topic addresses management of environmental, social and economic issues within the reservoir area during project implementation, and planning for reservoir management for the operating hydropower facility. The intent is that reservoir preparation and filling is well managed, taking into account construction, environmental and social management requirements, and future power generation operation, maintenance and multi-purpose uses where relevant.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

- 3 – **Assessment:** The important considerations prior to and during reservoir filling and during operations have been identified through an assessment process; and monitoring of implementation activities is being undertaken appropriate to any identified issues.
- **Management:** Measures are in place to address identified needs during reservoir preparation and filling; and plans are in place to manage the reservoir and any associated issues for the operating hydropower facility.
  - **Conformance/Compliance:** Processes and objectives in place for reservoir management have been and are on track to be met with no significant non-compliances or non-conformances, and reservoir management related commitments have been or are on track to be met.

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

- 5 – **Assessment:** In addition, monitoring of reservoir preparation and filling activities takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.
- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
  - **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.

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## Assessment Guidance:

**Topic relevance:** This topic is relevant if there is any storage of water.

**Reservoir** refers to any artificial pondage or lake used by the project for the storage and regulation of water.

**Reservoir area** refers to the area that is inundated when the reservoir is at its maximum expected level and the dry buffer zone above this level.

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**Considerations prior to reservoir filling** refers to preparations for any significant timing elements of construction, social or environmental management plans which might have bearing on the reservoir area; examples include: clearing of vegetation, management of contaminated or cultural heritage sites that would be inundated, construction of boat ramps, preparation of areas to receive relocated wildlife, etc.

**Considerations during reservoir filling** examples include: safety, wildlife management, land or slope stability, timing of reservoir filling in relation to resettlement or other management activities, etc.

**Considerations for reservoir operations** examples include: optimising power generation, maintenance requirements, debris management (particularly an issue in monsoon prone parts of the world), multiple uses (e.g. commercial, recreational), safety, flood management, shoreline erosion, reservoir sedimentation, public access, water quality, biodiversity, invasive species, water-borne diseases, monitoring, etc.

**Potential interviewees:** project manager; construction manager; project environmental and social issues managers; local government representative

**Examples of evidence:** integrated project management plans; construction management plans; reservoir design documents; model output for reservoir operations; relevant excerpts of environmental and social impact assessments and management plans; reservoir operating rules

## I-20: Downstream Flow Regimes

This topic addresses the flow regimes downstream of project infrastructure during the project implementation stage. The intent is that flow regimes downstream of project infrastructure are planned and delivered with an awareness of and measures incorporated to address environmental, social and economic objectives affected by those flows.

### Scoring:

1 - *There are significant gaps relative to basic good practice.*

2 - *Most relevant elements of basic good practice have been undertaken, but there is a significant gap.*

3 – **Assessment:** Issues in relation to flow regimes downstream of project infrastructure during the project implementation stage have been identified and assessed; and monitoring is undertaken to assess effectiveness of flow management measures or any emerging issues during project implementation.

- **Management:** In the case that a need to address downstream flow regimes has been identified, measures are in place to manage identified downstream flow issues; and where formal commitments have been made, these are publicly disclosed.

- **Conformance/Compliance:** In the case that a need to address downstream flow regimes has been identified, processes and objectives in place to manage downstream flows have been and are on track to be met with no significant non-compliances or non-conformances, and downstream flow related commitments have been or are on track to be met.

- **Outcomes:** In the case that a need to address downstream flow regimes has been identified and commitments to downstream flow regimes have been made, these take into account environmental, social and economic objectives **within the framework of legal requirements.**

4 - *All relevant elements of basic good practice have been undertaken and in one or more cases exceeded, but there are one or more significant gaps in the requirements for proven best practice.*

5 – **Assessment:** In addition, monitoring of downstream flow issues takes into account inter-relationships amongst issues, and both risks and opportunities that become evident during implementation.

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- **Management:** In addition, processes are in place to anticipate and respond to emerging risks and opportunities.
- **Conformance/Compliance:** In addition, there are no non-compliances or non-conformances.
- **Outcomes:** In the case that a need to address downstream flow regimes has been identified and commitments to downstream flow regimes have been made, in addition these represent an optimal fit amongst environmental, social and economic objectives within practical constraints of the present circumstances.

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## Assessment Guidance:

**Topic relevance:** This topic will always be relevant, because processes should be in place to identify any ongoing or emerging issues relating to downstream flow regimes during project implementation. If there are no issues identified, then the topic is scored on the Level 3 statement for the Assessment criterion, and the Level 5 statements for the Assessment, Management and Conformance/Compliance criteria. If issues are identified, then all other statements are relevant.

**Flow regimes** is with reference to the fact that there may be multiple sites at which flows are affected by project infrastructure, e.g. downstream of a diversion dam as well as downstream of the main dam or the turbines.

**Downstream flow regimes** might be specified for different components and stages of projects in a manner such as, for example: minimum flows in part of certain seasons, maximum flows in part of certain seasons. Individual countries may have laws regarding downstream flow regulation which must be complied with. In cases where the downstream impact of the project on flow regimes extends beyond the jurisdiction in which the project is found, any implications of this would need to be taken into consideration.

**Optimal** in this context means best fit once all identified environmental, social and economic considerations have been factored in, based on the outcomes of a consultative process; the best fit may in fact be no flow at all in a particular river reach because another river reach has objectives that are considered of higher priority.

**Potential interviewees:** project manager; hydrologist; project environmental and social issues managers; aquatic ecologist; independent environmental flows expert; stakeholder representatives; project affected community representatives; downstream riparian community representatives; representative from the responsible governmental authority; downstream transboundary community representatives if relevant

**Examples of evidence:** assessment of downstream flows in relation to flow-related objectives; downstream flow regime plans specifying range, variability and verification location; system operations plans; design documents in relation to release mechanisms; records of consultation and stakeholder involvement; records of response to stakeholder issues; third party review report; commitments and agreements; monitoring reports

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## Glossary of Terms

**Additional Benefits:** Benefits for the region that can be leveraged from the project.

**Accountability:** Obligation of an individual, firm, or institution to account for its activities, accept responsibility for them, and to disclose the results in a transparent manner.

**Accountable:** Responsible to or liable to account for someone or for some activity.

**Adequate:** Sufficient or enough to satisfy a requirement or meet a need.

**Agreement:** A recorded understanding between individuals, groups or entities to follow a specific course of conduct or action. It may be incorporated into, for example, a memorandum of understanding, minutes of a meeting, a letter of intent, a joint statement of principles, a contract, an operating licence, etc.

**Appropriate:** Suitable for a particular person, condition, occasion, or place; fitting; meeting identified needs or requirements.

**Baseline:** A set of measurements, statistics, or conditions used as a basis for later comparison. The baseline refers to the pre-project conditions, prior to the initiation of the project, against which post-project changes can be compared. For operating hydropower facilities, if a pre-project baseline does not exist then the present condition is taken as the baseline.

**Commitment:** A binding pledge or promise to do, give, or refrain from doing something.

**Community Groups:** Groups of people with common characteristics or interests living together within the larger society. There are many different ways to view these groups, and these will need to be defined in meaningful ways for the project. These may include, by way of example, urban dwellers, rural dwellers, indigenous peoples, ethnic minorities, people of a common profession or religion, disabled, elderly, illiterate, women, men, children, etc.

**Compliance:** Adherence to legal requirements, policies and public commitments.

**Comprehensive:** All relevant components have been considered and addressed.

**Conformance:** Addresses the level of conformance of implementation measures with most up-to-date project-related plans.

**Consent:** Signed agreements with community leaders or representative bodies who have been authorised by the affected communities which they represent, through an independent and self-determined decision-making process undertaken with sufficient time and in accordance with cultural traditions, customs and practices.

**Corruption:** Lack of integrity or honesty (especially susceptibility to bribery); use of a position of trust for dishonest gain.

**Credible:** Capable of being believed; plausible; worthy of confidence; reliable.

**Cultural Heritage:** The legacy of physical artefacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations.

**Cumulative Impacts:** The phenomenon of changes that result from numerous human-induced alterations, either through persistent additions or losses of the same materials or resource, or through the compounding effects as a result of the coming together of two or more effects.

**Deception:** The fact or state of being deceived; to be given cause to believe what is not true; to be misled.

**Developer:** The lead entity or consortium of entities investing in the development of a hydropower project.

**Directly Affected Stakeholder:** Those stakeholders with substantial rights, risks and responsibilities in relation to the issue. These may be inside the project affected area (e.g.

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project affected communities) or outside the project-affected area (e.g. government regulators, finance institution representatives, or investment partners).

**Disclosure:** Made publicly available (see also “Publicly disclosed”).

**Economic Displacement:** Loss of assets, access to assets, or income sources or means of livelihoods as a result of (i) acquisition of land, (ii) changes in land use or access to land, (iii) restriction on land use or access to natural resources including water resources, legally designated parks, protected areas or restricted access areas such as reservoir catchments and (iv) changes in environment leading to health concerns or impacts on livelihoods. Economic displacement applies whether such losses and restrictions are full or partial, and permanent or temporary.

**Effective:** Producing or capable of producing an intended, expected and/or desired effect.

**Engaged:** Interacted with, often through consultation processes.

**Equitable:** Fair, just or impartial

**Evidence:** Evidence provided by an auditee and used by an assessor to verify whether and to what degree a criterion has been met. Evidence can be qualitative or quantitative information, records or statements of fact, either verbal or documented. It is retrievable or reproducible; not influenced by emotion or prejudice; based on facts obtained through observation, measurements, documentation, tests or other means; factual; reproducible; objective and verifiable.

**Expert:** A person with a high degree of skill in or knowledge of a certain subject, as a result of a high degree of experience or training in that subject.

**Gender Analysis:** The process of assessing the impact that an activity may have on females and males, and on gender relations. It can be used to ensure that men and women are not disadvantaged by development activities, to enhance the sustainability and effectiveness of activities, or to assess and build capacity and commitment to gender sensitive planning.

**Governance:** The combination of processes and structures that inform, direct, manage and monitor the activities of the project toward the achievement of its objectives.

**Grievance Mechanisms:** The processes by which stakeholders are able to raise concerns, grievances and legitimate complaints, as well as the project procedures to track and respond to any grievances.

**Human Rights:** The basic rights and freedoms to which all humans are entitled, encompassing civil, political, economic, social, and cultural rights, and enshrined in international declarations such as the Universal Declaration on Human Rights 1948.

**Hydrological Resource:** Water inflows to the project.

**Impact:** Effect or consequence of an action or event; the degree to which an impact is interpreted as negative or positive depends on context and perspective.

**Independent Review:** Expert review by someone not employed by the project and with no financial interest in profits made by the project.

**Indigenous Peoples:** A distinct social and cultural group possessing the following characteristics in varying degrees: self-identification as members of a distinct indigenous cultural group and recognition of this identity by others; collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories; customary cultural, economic, social or political institutions that are separate from those of the dominant society or culture; an indigenous language, often different from the official language of the country or region.

**Integrated:** Merged, interspersed, embedded into something.

**Integrated Water Resources Management (IWRM):** A process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

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**Invasive Species:** A species that does not naturally occur in a specific area and whose introduction does or is likely to cause economic or environmental harm or harm to human health.

**Land Rehabilitation:** The process of returning the land to some degree of its former state after disturbance or damage associated with project implementation.

**Legacy Issues:** Impacts of previous projects that are unmitigated or not compensated with a similar good or service, or long-standing issues with a present (existing) project, or pre-existing issues in the present location of a new project.

**Livelihood:** The capabilities, assets (stores, resources, claims and access) and activities required for a means of living.

**Living Standards:** The level of material comfort as measured by the goods, services, and luxuries available to an individual, group, or nation; indicators of household well-being; examples include: consumption, income, savings, employment, health, education, nutrition, housing, and access to electricity, clean water, sanitation, health services, educational services, transport, etc.

**Local:** Administrative subdivisions of a national territory (e.g. with reference to local land use plans)

**Long-Term:** The planned life of the hydropower project.

**Maintenance:** The work of keeping something in proper condition; upkeep.

**Management Plan:** A management plan is a tool used as a reference for managing a particular project issue, and establishes the why, what, how, who, how much, and when for that issue.

**Management System:** The framework of processes and procedures used to ensure that an organisation can fulfill all tasks required to achieve its objectives.

**Maximised:** Achieved to as great an extent practicable, taking into account all constraints.

**Minimised:** Achieved to as little an extent practicable, taking into account all constraints.

**Mitigation:** Moderation, alleviation, and/or relief of a negative impact

**Non-Compliance:** Not meeting legal, licence, contractual or permit obligations

**Non-Conformance:** Not meeting targets and objectives in the management plans; these may or may not be publicly stated commitments, but they are not legally binding and violation can not incur legal action.

**Non-Critical:** Not essential for something to be suitable, adequate and/or effective

**Occupational Health and Safety:** Protecting the safety, health and welfare of people engaged in work or employment, for example through preventing disease or injury that might arise as a direct result of the workplace activities.

**Optimal:** Best fit, once all considerations have been factored in, based on the outcomes of a consultative process

**Optimisation Process:** The process by which alternatives have been considered towards determining the best fit

**Outstanding:** Not settled or resolved.

**Plans:** Management measures to address an identified issue, that may or may not be formalised into business management plans. Plans can include documented planned arrangements, for example based on agreements for forward actions made at meetings. Plans may also be those of the developer, owner or operator, or plans of the relevant government agency or other institution which has the primary responsibility for that sustainability topic. Plans can also be those developed by the contractor responsible for implementation.

**Political Risk:** A risk of financial loss or inability to conduct business faced by investors, corporations, and governments due to government policy changes, government action

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preventing entry of goods, expropriation or confiscation, currency inconvertibility, politically-motivated interference, government instability, or war.

**Practicable:** Capable of being done with means at hand and circumstances as they are.

**Process:** A series of actions, changes, or functions bringing about a result.

**Procurement:** The acquisition of goods and/or services at the best possible cost, in the right quality and quantity, at the right time, in the right place and from the right source for the direct benefit or use of the hydropower project or operating facility, generally via a contract.

**Programme:** Relates to the hydropower development programme, which encompasses all project components (construction, environmental, social, resettlement, finance and procurement, and communications, etc.).

**Project-Affected Area:** The catchment, reservoir, and downstream of the project site and associated dams, and the area affected by any associated developments (e.g. roads, transmissions lines, quarries, construction villages, relocation areas, etc).

**Project Affected Communities:** The interacting population of various kinds of individuals in the project affected area who are affected either positively or negatively by the hydropower project preparation, implementation and/or operation.

**Project Catchment:** The portion of the river basin that drains into the project reservoirs, either to pass ultimately through the generation turbines or to spill over the dams into the downstream rivers.

**Project Components:** Components of the overall hydropower development programme, including design, construction, environmental, social, resettlement, finance, communications and procurement.

**Project Lands:** The land that is owned, utilised and/or affected by the project.

**Protection:** To keep in safety and protect from harm, decay, loss, damage or destruction.

**Publicly Disclosed:** The public is informed that the agreement, commitment, assessment, management plan or significant report has been made or completed, and it is made publicly available either voluntarily (e.g. posted on a website) or on request in a timely manner.

**Refurbishment:** The state of being restored to its former good condition.

**Regional:** Refers to a supranational entity in an international context. To refer to administrative subdivisions of a national territory (e.g. with reference to local land use plans) this protocol uses the designation of local.

**Relevant:** Directly related, connected, applicable, current or pertinent to a topic. In the Protocol, relevance will be determined based on project-specific considerations and analyses. Project representatives make a case for what is relevant and provide evidence to support this, e.g. support of regulatory authorities; the assessor views and seeks evidence to affirm relevance.

**Reservoir:** Any artificial pondage or lake used by the project for the storage and regulation of water.

**Reservoir Area:** The area that is inundated when the reservoir is at its maximum expected level and the dry buffer zone above this level.

**Resettlement:** The process of moving people to a different place to live, because due to the project they are no longer allowed to stay in the area where they used to live.

**Resettlees:** Those people who are required to be resettled, including those who have formal legal rights, customary or traditional rights, as well as those who have no recognizable rights to the land.

**River Basin:** The area drained by a river and all its tributaries

**Resettlement Action Plan:** A document or set of documents specifically developed to identify the actions that will be taken to address resettlement. It would typically include identification of those being resettled; the socio-economic baseline for the resettlees; the measures to be implemented as part of the resettlement process including those relating to resettlement assistance and livelihood support; the legal and compensation frameworks;

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organisational roles and responsibilities; budget allocation and financial management; the timeframe, objectives and targets; grievance redress mechanisms; monitoring, reporting and review provisions; and understandings around consultation, participation and information exchange.

**Sensitivity Analysis:** Investigation into how projected performance varies along with changes in the key assumptions on which the projections are based

**Short-Term:** Covers day-to-day operations.

**Significant:** Important in effect or consequence, or relatively large.

**Stakeholder:** One who is interested in, involved in or affected by the hydropower project and associated activities.

**Stakeholder Group:** A set of stakeholders with common characteristics or interests.

**Strategic Fit:** The compatibility of the project with local, national and regional needs identified through the priorities and objectives put forth in options assessments and other relevant local, national and regional and multi-national policies and plans.

**Suitable:** Appropriate for the desired purpose, condition or occasion.

**Timely:** Occurring at a suitable or opportune time

**Transboundary Agreements:** Agreements made amongst riparian states about how shared water resources will be utilized by the parties involved, and the processes that will be followed to sustain these understandings.

**Transparent / Transparency:** Open to public scrutiny, publicly available, and/or able to be viewed or disclosed to the public on request.

**Upgrade:** To improve to a higher grade or standard.

**Vulnerable Social Groups:** Social groups who are marginalised or impoverished with very low capacity and means to absorb change.

## Understanding the Protocol's Gradational Assessment Approach

The gradational approach undertaken in the Preparation, Implementation and Operation assessments tools can be understood by examination of Table 1. This table provides general guidance on characteristics that are likely to be exhibited for these different criteria at the five different scoring levels. The scoring statements found in the Preparation, Implementation and Operation assessment tools have been guided by the approach shown in Table 1. This table is not intended to be the basis for assigning of scores, as sufficient information should be provided on the topic pages. However, this table can be referred to during an assessment if there is insufficient information in the topic scoring statements and in the topic-specific assessment guidance to help the assessor to determine a score. If there are questions in the assessment process about whether the assessment, management and stakeholder engagement approaches are sufficient for basic good practice, Table 1 may be of assistance.

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Table 1 - Understanding the Protocol's Gradational Approach

This table captures characteristics that are likely to be exhibited at different scoring levels for each of the criteria used in the Hydropower Sustainability Assessment Protocol

Level	Assessment	Management	Stakeholder Engagement	Stakeholder Support	Outcomes	Conformance / Compliance
5	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective assessment with no significant opportunities for improvement; • In addition to basic good practice (Level 3), the assessment are likely to take a relatively broader, external or regional view or perspective; emphasise opportunities; and show a high level of examination of interrelationships amongst relevant sustainability issues</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective management processes with no significant opportunities for improvement; • In addition to basic good practice (Level 3), management plans and processes are likely to show excellent anticipation of and response to emerging issues or opportunities; senior management and/or executive decisions are likely to be timely, efficient and effective in response to monitoring data, investigations and issues arising; and in cases commitments in plans are public, formal and legally enforceable.</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective stakeholder engagement processes with no significant opportunities for improvement; • In addition to basic good practice (Level 3), the engagement is likely to be inclusive and participatory with the directly affected stakeholders; • thorough feedback is likely to be available on how directly affected stakeholder issues are taken into consideration; • In cases there is likely to be directly affected stakeholder involvement in decision-making; and • Information identified through engagement processes to be of high interest to stakeholders is released publicly in a timely and easily accessible manner</li> </ul>	<ul style="list-style-type: none"> <li>• There is support of nearly all directly affected stakeholder groups for the assessment, planning or implementation measures for that topic, or no opposition by these stakeholders; • In cases formal agreements or consent with the directly affected stakeholder groups have been reached for management measures for that topic</li> </ul>	<ul style="list-style-type: none"> <li>• In addition to basic good practice (Level 3), there may be exhibited enhancements to pre-project conditions; contributions to addressing issues beyond those impacts caused by the project; leveraging of opportunities; or significant contribution to capacity building</li> </ul>	<ul style="list-style-type: none"> <li>• No non-compliances or non-conformances</li> </ul>
4	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective assessment with only a few minor gaps; • In addition to basic good practice (Level 3), the assessment is likely to exhibit some recognition of broader, external or regional issues; opportunities; and interrelationships amongst relevant sustainability issues</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective management processes with only a few minor gaps; • In addition to basic good practice (Level 3), management plans and processes are likely to exhibit good anticipation of and response to emerging issues or opportunities; and in cases commitments in plans are public and formal.</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective stakeholder engagement processes with only a few minor gaps; • In addition to basic good practice (Level 3), there is likely to be good feedback on how directly affected stakeholder issues have taken into consideration; and information on sustainability topics understood to be of high interest to stakeholders is voluntarily released publicly</li> </ul>	<ul style="list-style-type: none"> <li>• There is support of a large majority of directly affected stakeholder groups for the assessment, planning or implementation measures for that topic, or only very low opposition by these stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• In addition to basic good practice (Level 3), there may be exhibited full compensation of negative impacts; some positive enhancements; or evidence of capacity building associated with the project</li> </ul>	<ul style="list-style-type: none"> <li>• Very few minor non-compliances and non-conformances that can be readily remedied</li> </ul>
3	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective assessment with no significant gaps. This would typically encompass (as appropriate to the topic and life cycle stage) identification of the baseline condition including relevant issues, appropriate geographic coverage, and appropriate data collection and analytical methodologies; identification of relevant organisational roles and responsibilities, and legal, policy and other requirements; appropriate utilisation of expertise and local knowledge; and appropriate budget and time span. At level 3 the assessment encompasses the considerations most relevant to that topic, but tends to have a predominantly project-focused view or perspective and to give stronger emphasis to impacts and risks than it does to opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective management processes with no significant gaps. These would typically encompass (as appropriate to the topic and life cycle stage) development and implementation of plans that: • integrate relevant assessment or monitoring findings; • are underpinned by policies; • describe measures that will be taken to address the considerations most relevant to that topic; • establish objectives and targets ; • assign roles, responsibilities and accountabilities; • utilise expertise appropriate to that topic; • allocate finances to cover implementation requirements with some contingency; • outline processes for monitoring, review, and reporting; and • are periodically reviewed and improved as required.</li> </ul>	<ul style="list-style-type: none"> <li>• Suitable, adequate and effective stakeholder engagement processes with no significant gaps. These would typically encompass (as appropriate to the topic and life cycle stage): • Identification of directly affected stakeholders; • Appropriate forms, timing, frequency and locations of stakeholder engagement, often two-way; • Freedom for affected stakeholders to participate; • Attention to special stakeholder engagement considerations relating to gender, minorities, cultural sensitivities, level of literacy, and those who might require particular assistance; • Mechanisms by which stakeholders can see that their issues are recognised and acknowledged, and how they have been or are being responded to; and • disclosure of information on significant sustainability topics (in cases this may be on request)</li> </ul>	<ul style="list-style-type: none"> <li>• There is general support amongst directly affected stakeholder groups for the assessment, planning or implementation measures for that topic, or no significant ongoing opposition by these stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• As appropriate to the topic and the life cycle stage, there may be exhibited avoidance of harm; minimisation and mitigation of negative impacts; fair and just compensation; fulfilment of obligations; or effectiveness of implementation of plans</li> </ul>	<ul style="list-style-type: none"> <li>• No significant non-compliances and non-conformances</li> </ul>
2	<ul style="list-style-type: none"> <li>• A significant gap in assessment processes relative to basic good practice (Level 3).</li> </ul>	<ul style="list-style-type: none"> <li>• A significant gap in management processes relative to basic good practice (Level 3).</li> </ul>	<ul style="list-style-type: none"> <li>• A significant gap in stakeholder engagement processes relative to basic good practice (Level 3).</li> </ul>	<ul style="list-style-type: none"> <li>• There is support amongst some directly affected stakeholder groups for the assessment, planning or implementation measures for that topic, with some opposition.</li> </ul>	<ul style="list-style-type: none"> <li>• A significant gap relative to basic good practice (Level 3), for example some deterioration in baseline condition</li> </ul>	<ul style="list-style-type: none"> <li>• A significant non-compliance or non-conformance</li> </ul>
1	<ul style="list-style-type: none"> <li>• Significant gaps in assessment processes relative to basic good practice (Level 3).</li> </ul>	<ul style="list-style-type: none"> <li>• There are significant gaps in management processes relative to basic good practice (Level 3).</li> </ul>	<ul style="list-style-type: none"> <li>• There are significant gaps in stakeholder engagement processes relative to basic good practice (Level 3).</li> </ul>	<ul style="list-style-type: none"> <li>• There is low support amongst directly affected stakeholder groups for the assessment, planning or implementation measures for that topic, or a majority oppose</li> </ul>	<ul style="list-style-type: none"> <li>• Significant gaps relative to basic good practice (Level 3), for example deterioration in baseline condition with delay or difficulties in addressing negative impacts</li> </ul>	<ul style="list-style-type: none"> <li>• Significant non-compliances and non-conformances</li> </ul>