



international
hydropower
association

sustainability **assessment protocol**

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IHA Commitment to Sustainability

The International Hydropower Association (IHA) regards sustainability as a fundamental component of social responsibility, sound business practice, and natural resource management.

Sustainable development has been defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Report of the World Commission on Environment and Development, 1987). Sustainability requires the integration of three components – economic development, social development, and environmental protection – as interdependent, mutually reinforcing pillars. Overarching objectives of, and essential requirements for sustainable development include:

- eradicating poverty;
- changing unsustainable patterns of production and consumption; and
- protecting and managing the natural resource base that underpins economic and social development.

The International Hydropower Association (IHA) has published *Sustainability Guidelines* to promote greater consideration of environment, social, and economic sustainability in the assessment of:

- new energy projects;
- new hydro projects; and
- the management and operation of existing hydropower facilities.

To support the *Sustainability Guidelines* the IHA has also developed this document – *Sustainability Assessment Protocol*.

Using the Sustainability Assessment Protocol

The *Sustainability Assessment Protocol* has been developed primarily to assist IHA members in assessing performance against criteria described in the *IHA Sustainability Guidelines*.

The document is in three sections. The first section (*Section A – New Energy Projects*) gives general guidance on sustainability issues that should be considered when assessing new energy projects. This section describes each of the 20 selected sustainability aspects, and lists key considerations and assessment requirements for each aspect. It can be used as part of a preliminary due diligence review of proposed new energy projects.

Assessments associated with the second section (*Section B – New Hydro Projects*) and third section (*Section C – Operating Hydropower Facilities*) rely on objective evidence to support a sustainability score against each of twenty sustainability aspects. These aspects of sustainability have been selected to give appropriate coverage to relevant economic, social, and environmental issues. Assessment is scored from 5 through to zero, and looks at both process and performance against each aspect or criteria.

Assessing process relies on the presence of a systematic approach to managing economic, social and environmental issues. The next section in this document, *A Systematic Management Approach to Sustainability*, provides more detail on this. A section titled *Obtaining Objective Evidence* is also included to assist in the process of obtaining scores against each of the twenty sustainability aspect.

A Systematic Management Approach to Sustainability

In assessing the adequacy of process, one should look for evidence of a systematic approach.

“**Plan, do, check, act**” is a simple way of defining such an approach.

Plan *what is needed;*

Do it;

Check *that it works;*

Act *to correct any problems and fix their causes, and/or to improve performance.*

First **plan** – Determine the goals and determine methods of reaching the goals.

- Identify activities in hydropower operations, and maintenance that could affect sustainability (economic, social, and/or environmental issues).
- Identify, assess, and evaluate potential hazards and risks associated with these activities, taking into consideration legislation and regulations, and the concerns of employees, communities, customers, suppliers, and other stakeholders.
- Establish objectives and targets for each relevant activity. These are the desired outcomes.
- Identify, document, and communicate actions necessary to perform and manage relevant activities, and to meet desired outcomes.
Consider:
 - factors that can affect the results and therefore performance;
 - monitoring and measuring of both performance and process.
- Include considerations such as: suitable and adequate resources and competencies, responsibilities and authorities, purchasing and contractors, legal and other requirements, records that need to be maintained, measuring equipment, etc.

**PLANNING ensures proper preparation for activities to be performed.
This reduces the risk of undesired results and poor performance.**

Next, **do** what has been planned. Implement the planned arrangement. Include the provision of adequate and suitable resources and competencies, the use of operating processes, and monitoring and measuring.

Then **check** what has been done.

Determine if plans have been:

- followed as specified and
- effective in delivering the required output, and achieving objectives and targets.

Establish results and apply performance measurements. Include compliance with regulatory and legislative requirements.

Finally, **act** on the information available from results and performance.

The aim is to improve by:

- fixing any problems,
- correcting any deficiencies that have already caused problems,
- preventing any problems that might occur in the future, and
- making processes more efficient and effective.

This may involve:

- correcting something which was not implemented as planned,
- adjusting the plan because it did not deliver what was required, or
- modifying plans to include improvements and/or for changes in circumstances.

Best practice considers available facts and evidence to develop processes that result in the greatest good with least harm.

Obtaining Objective Evidence

1. SUMMARY

- Audits and self-assessments are objective processes that are done to measure performance against some standard and/or planned arrangement.
- Audit findings (and in the case of the Sustainability Assessment, the resultant scoring) are supported by objective evidence.
- Objective evidence must be recorded in sufficient detail so that findings can be reasonably reproduced by subsequent examination.

2. AUDITS

2.1 What is an Audit?

Auditing is a systematic, independent, and documented process for obtaining audit objective evidence and evaluating it to determine the extent to which audit criteria are fulfilled. This is done to establish the correlation between assertions and established criteria, and to communicate the results to interested users. It is an independent, objective assurance and consulting activity designed to add value and improve an organisation's operations.

2.2 What is the Purpose of an Audit?

The purpose of an audit is the systematic scrutiny of performance throughout an organisation's existing operations. An audit is an examination of management systems and facilities. An audit measures compliance against both a standard and any planned arrangements that have been developed to address a standard.

3. DIFFERENT TYPES OF AUDITS

3.1 Self Assessment

A self assessment is like an audit because it examines results versus criteria. However, a self-assessment is performed by part of an organisation upon itself, where those responsible perform the assessment of their own work.

3.2 First Party (Internal) Audit

A first party audit is performed by an organisation upon itself. A first party audit is conducted by a part of the organisation that is independent of the area being audited.

3.3 Second Party (External) Audit

Second-party audits are conducted by parties having an interest in an organisation, such as customers, or by other persons on their behalf.

3.4 Third Party (External) Audit

Third-party audits are conducted by external, independent auditing organisations, such as those offering certification of conformity to requirements of a particular standard.

4. CONDUCTING AN AUDIT

4.1 Who Conducts an Audit?

An audit is conducted by a team of people who will assemble factual information prior to and during a site visit, analyse the facts and compare them with the criteria for the audit, draw conclusions, and report their findings.

4.2 Against what Criteria are Audits Conducted?

Audits are conducted within some kind of formal structure (an "audit protocol" The Sustainability Assessment in the case of IHA Sustainability Guidelines), so that the process can be reliably repeated at other facilities and quality can be maintained.

4.3 What is done in Audit Preparation?

Pre-audit steps include planning the audit, selecting the personnel for the audit team, becoming familiar with the audit protocol, and obtaining background information about the facility / project.

The need for education of those involved in the audit process (the auditors or those being audited) should not be underestimated. Effort spent on explanation and education will ensure that the audits are managed positively and are not seen as a threat.

4.4 What about Auditor expertise and competencies?

Auditors need to have expertise in:

- a) The auditing process itself;
- b) The standard against which the audit is being tested for compliance;
- c) Technical issues being applied towards compliance with the standard.

Note: not all auditors on an audit team need to have comprehensive expertise on technical matters.

5. AUDIT OBJECTIVE EVIDENCE

5.1 What is Audit objective Evidence?

Audit objective evidence:

- a) Exists and is retrievable or reproducible;
- b) Is not influenced by emotion or prejudice;
- c) Is qualitative or quantitative information, records or statements of fact;
- d) Pertains to the quality of an item or service or to the existence and implementation of a process;
- e) Is based on facts obtained through observation, measurement, test or other means;
- f) Is verifiable;
- g) Is used by an auditor to determine whether or not the audit criteria have been met;
- h) Is verbal or documented;
- i) Is reported using detailed notes taken during the audit of the specific reference to the audit objective evidence, whether it be documents, locations, etc.

5.2 What about Verifiability / Verification of Audit Objective Evidence?

Audit objective evidence is generally verifiable in the sense of tangible, physical evidence. However, a situation may occur in which a finding or observation is based on verbal testimony provided. This type of evidence, while not preferable, may be acceptable. In the case of verbal testimony, the auditor should attempt to corroborate it with physical, objective evidence.

Evidence obtained during the audit process is verified. In verifying documentation, the auditor ensures that the documents produced are genuine, current, and valid. The level of verification required is commensurate with the importance of the item being audited.

5.3 What are the Types of Audit Objective Evidence?

There are two basic types of audit objective evidence:

- a) Physical objective evidence that can be seen.
- b) Testimony given as being organisational policy, procedure, etc.

5.4 What is done to Collect Audit Objective Evidence?

There are three different modes for collecting audit objective evidence.

- a) Document review - This could include examining, plans, procedures, documents, and records.
- b) Interviews - These could be conducted with responsible staff, management, and contractors. Interviews should be pre-arranged and may consist of numerous separate discussions with individuals or groups.
- c) Direct observation - This could involve looking at physical locations and at other activities related to management of an activity or process.

6. GATHERING AND RECORDING AUDIT OBJECTIVE EVIDENCE

6.1 What is Considered when Gathering Audit Objective Evidence?

When gathering audit objective evidence, the following needs to be considered:

- a) Sufficient; is there enough evidence?
- b) Necessary; is it really essential evidence?
- c) Accurate; does it reflect what is really done or has occurred?

6.2 What are the Outputs from Gathering Audit Objective Evidence?

6.2.1 Audit Working Papers

A considerable amount of data and information may be gathered during audit. This consists of documentation supplied by the facility and/or specific references to documentation, the auditor's own notes and observations, results of sampling and monitoring if appropriate, and photographs, plans, maps, diagrams, and other illustrative material.

Audit working papers should include notes of people contacted, discussions held, records reviewed, tests performed, and conclusions reached. These working papers form an important part of the documentation of an audit and must be carefully assembled.

Each item of reference should be organised so that it can be easily reviewed and retrieved. In the event of any dispute regarding the audit findings or procedures, these working papers will be important. However, their prime purpose is to support the findings.

6.2.2 Documentation

Not all of the many documents reviewed during an environmental audit need to be retained by the auditors. Only copies of such documentary evidence necessary to support or verify the audit evidence and findings should be retained. References to documentation may be sufficient, but these need to be detailed and specific, including items such as page / paragraph identification, revision number, date, etc.

6.2.3 Photography

Photography may be a vital part of gathering audit evidence.

A photograph could be of value to the auditor, as it can be examined in detail after the site inspection and can be referred to in ensuring all relevant details are included in the audit report.

Photographs could be valuable additions to an audit report.

6.2.4 Sampling and Analysis

Generally, the auditor does not carry out sampling or monitoring. Monitoring is carried out by facility / project management in accordance with planned arrangements. If monitoring results should be available but are not, the auditor records that fact.

Sampling in terms of an audit means sampling by the auditor of a statistically representative number of documented results.

6.3 How is Audit Objective Evidence Recorded?

The role of the auditor is to observe, record, verify, and report. The auditor needs to be attentive in making observations and be experienced in recording those observations. Nothing should be committed to memory. It is impossible to recall all of the facts and figures that are presented during the course of an audit unless they are properly recorded.

In conducting the audit, each auditor keeps notes that provide the basis for the score assigned to each item. These notes contain sufficient detail, identification, and/or examples so that they assist the auditor in documenting the findings at the end of the audit. If applicable, (i.e., not a general finding), these findings need to be specific enough so that the auditor and/or the auditee and/or subsequent audits or examinations can retrieve the item that led to the finding. This is done by providing sufficient information about the finding including identification, location, and any other information that may assist.

6.4 How is Audit Objective Evidence Evaluated and Reported?

An audit is a comparison of audit objective evidence to audit criteria to determine findings. The evidence is the objective information collected through interviews, visual reconnaissance, and documentation review. The audit criteria are the expectations or rules of how conditions should be.

In compliance auditing, the criteria are the regulations, guidelines, and/or standards.

When audit objective evidence is compared to criteria, one can determine whether the audited entity does or does not conform. This determination is a finding, and a finding can either be one of conformance, or non-conformance. Therefore, an audit will always produce findings, even if what is being audited is in full conformance with criteria.

It is important that the auditor records all audit objective evidence available, both of deficiencies and of conformance in sufficient detail. If a deficiency has been observed, the auditor needs to ensure that the auditee / representative agrees with the facts of what has been observed.

Audit findings are evaluated on three criteria:

- a) Does the parameter being evaluated comply with required standards;
- b) Has the finding been verified; and
- c) Is there any existing, residual, inherent, contingent, or potential risk revealed by this finding?

Explanations for Commonly Used Terms

1. Sustainability	Involves activity that does not compromise the ability of future generations to meet their own needs. Sustainable activity should improve the quality of life without doing harm. Sustainability objectives should encompass economic, environmental, and social performance.
2. Comprehensive	Suitable, adequate, and effective.
3. Suitable	Appropriate for a desired purpose, condition, or occasion.
4. Adequate	Sufficient or enough to satisfy a requirement or meet a need.
5. Effective	Producing or capable of producing an intended, expected, and/or desired effect.
6. Practicable	Capable of being done with means at hand and circumstances as they are. Examples include: achievable in the context of cost for value obtained, political and legal acceptability, within the control or influence of the power station operator.
7. Optimal	At or very near maximum effectiveness.
8. Long-term	The planned life of the scheme.
9. Short term	Covers day-to-day operations.
10. Directly Affected Stakeholders	Are those communities within the immediate vicinity of the scheme, e.g., around the reservoir and downstream.
11. Broader Community	Essentially those in the area connected to or served by the scheme itself.
12. Energy Payback Ratio	The ratio of energy produced during the normal lifespan of a power plant divided by the energy required to build, maintain, and fuel the generating equipment.

IHA Sustainability Assessment Protocol - Section A - New Energy Projects

This section of the document provides guidance on key sustainability aspects of new hydropower and other energy projects.

IHA believes that broad energy option assessment should be the responsibility of national and/or regional governments as part of their energy development strategy. These development strategies should be built on sound sustainability principles.

Project proponents should apply sustainability criteria when developing project proposals. This will allow the optimisation of environmental, social, and economic benefits and, conversely, eliminate unacceptable alternatives early in the planning process.

Each project is different, and it is sometimes difficult to directly compare one alternative with another. It is nevertheless important to make relevant comparisons that relate to the basic sustainability of a project. It should also be realised that an infinite variety of options is never available, and that fundamental factors such as affordability, resource availability, and scale of requirements define the possible options that need to be assessed.

Due Diligence Assessment of New Energy Projects

A due diligence review is an instrument to measure risk. It is usually performed as part of a decision on an investment in projects and can cover a broad range of risks. It is recommended that due diligence assessments be carried out on sustainability aspects of new energy projects prior to investment decisions.

Risk analysis requires risk to be determined from the combination of its components: likelihood and consequence. Tables below give examples of scales of likelihood and consequence. The relationship between the two components will be a function of the context of the risk and may depend on many factors. It can be illustrated by means of a matrix such as given in the third of the three tables (Level of Risk). Where risk ratings are medium or high, measures are required to ensure reduction or effective management of risk.

Likelihood

Level	Descriptor	Description
A	Almost certain	Is expected to occur in most circumstances.
B	Likely	Will probably occur in most circumstances.
C	Moderate	Might occur at some time.
D	Unlikely	Could occur at some time.
E	Rare	May occur only in very exceptional circumstances.

Consequence or Impact

Level	Descriptor	Examples
1	Insignificant	Very minor impact.
2	Minor	Minor impact, with moderate costs.
3	Moderate	Medium level impact requiring ongoing management or expensive corrective action.
4	Major	Major issue incident, high financial loss, high probability of significant regulatory breach.
5	Catastrophic	Major issue or incident of national or even global significance, very high and long-term costs.

Level of Risk

Likelihood		Consequence				
		Insignificant	Minor	Moderate	Major	Catastrophic
Level		1	2	3	4	5
A	Almost certain	Medium	High	High	Very High	Very High
B	Likely	Medium	Medium	High	High	Very High
C	Moderate	Low	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Rare	Low	Low	Low	Medium	High

Modified after Standards Australia Risk Management Guidelines - Companion to AS/NZS 4360:2004

Summary of Aspects (New Energy Projects)

No.	Aspect	No.	Aspect
A1	Demonstrated need for the project	A11	Planned operational efficiency
A2	Government and proponent policies	A12	Community acceptance
A3	Political risk and regulatory approval	A13	Social impact assessment and management planning
A4	Site selection and design optimisation	A14	Extent and severity of social, economic and cultural impacts on directly affected stakeholders
A5	Design, construction, and operational risks, and sustainability performance of partners and suppliers	A15	Safety issues and hazards
A6	Project finance risk	A16	Cultural heritage
A7	Economic viability and service delivery	A17	Environmental impact assessment and management planning
A8	Markets, innovation, and research	A18	Extent and severity of predicted environmental impacts
A9	Additional benefits and capacity building	A19	Air, water, and ground emissions, and waste management
A10	Short and long term reliability	A20	Greenhouse gases

A1 Aspect: Demonstrated need for the project.

Assessing, either by regulatory authorities or the proponent, to demonstrate a need for the project: These assessments should include:

- evidence of likely future energy requirements;
- evaluation of a range of alternative options (including practicable efficiency measures) to meet those requirements; and
- evidence that this project is the best option to meet those requirements.

Considerations	Assessment Requirements
Demonstrate a need for the project, including: <ul style="list-style-type: none"> • likely future energy requirements; • range of alternative options; • project is the best option. 	<ol style="list-style-type: none"> 1. Completion of an adequate and suitable evaluation of the need for the project. 2. A clearly demonstrated need for the project. 3. Evidence that this project is the best option.

A2 Aspect: Government and proponent policies.

Assessing the comprehensiveness of government policies (including their adequacy in relation to accepted sustainability standards, international obligations, and ethics) and the compatibility of the scheme (and proponent policies) with those government policies. In the absence of effective government policies, measuring the ability to ensure good practice in spite of this.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Government policies (including their adequacy in relation to accepted sustainability standards, international obligations, and ethics). • Proponent policies on employee health and well-being, equity and equal opportunity. • Scheme compatibility with government policies. • Compensating for gaps in government policies. 	<ol style="list-style-type: none"> 1. Identification of appropriate government policies that need to be taken into account. 2. Determination of gaps or absences in government policies (including their adequacy in relation to accepted sustainability standards, international obligations, and ethics). 3. Assessing the adequacy of proponent policies. 4. Compensatory measures in place to overcome gaps in government policies and ensure good practice.

A3 Aspect: Political risk and regulatory approval.

Measuring the level of sovereign risk and likelihood of regulatory approval.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Stability of the political environment. • Sovereign risk. • Regulatory approval. • Timing and conditions. 	<ol style="list-style-type: none"> 1. Determining stability of the political environment. 2. Determining the level of sovereign risk. 3. Level of confidence that political instability and/or sovereign risk will not pose a significant threat to the project. 4. Likelihood of obtaining regulatory approval. 5. Likelihood of timing and/or conditions of approval being appropriate.

A4 Aspect: Site selection and design optimisation.

Measuring the planning for, or implementation of site selection and design optimisation that:

- avoids exceptional environmental and cultural heritage sites;
- minimises disturbance to existing features and activities; and
- maximises economic, social, and environmental opportunities.

Considerations	Assessment Requirements
Understanding of optimisation requirements and opportunities for site selection and design, or a plan that will result in understanding.	<ol style="list-style-type: none"> 1. Determining how good the site selection and design is. 2. Assessing how much consideration has been given to: <ul style="list-style-type: none"> • avoidance of exceptional environmental and cultural heritage sites; • practicable minimisation of disturbance to existing features and activities; • practicable maximisation of economic, social, and environmental opportunities.

A5 Aspect: Design, construction, and operational risks, and sustainability performance of partners and suppliers.

Assessing the proponent's ability to design, construct, and operate the project. It also assesses the level of consideration of sustainability issues in the procurement of goods and services.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Planning for the design, construction, and operational phases of the project. • Competencies of design, construction, and operational resources. • Availability of design, construction, and operational resources during the required timeframes. • Sustainability performance of suppliers and partners, including internationally recognised labour practices. • Relationships with major partners, suppliers, and service providers. 	<ol style="list-style-type: none"> 1. Identification and risk assessment of factors that could affect the outcome of the design, construction, and operational phases of the project. 2. Evaluation of the adequacy and suitability of project management plans. 3. Identification of activities that need be performed and competencies needed to perform them. 4. Determination of timeframes when resources are needed and ensuring their availability. 5. Matching activities and timeframes with required competencies. 6. Assessing the understanding of sustainability issues in purchasing goods and services by the proponent. This includes a comprehensive goods and service provider assessment and selection process. 7. Determining the strengths and relationships with suppliers and partners including effectiveness of dispute resolution processes. 8. Determining performance standards and assessing whether they have been met.

A6 Aspect: Project finance risk.

Assessing the finance availability and terms for the design and construction phases of the project.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • The availability of adequate finance. • Terms and conditions (short-term and long-term) of the finance. 	<ol style="list-style-type: none"> 1. Determining if adequate finance is available. 2. Assessing the certainty of the finance availability. 3. Assessing how favourable terms and conditions are.

A7 Aspect: Economic viability and service delivery.

Analysing the short and long-term economic viability of the project and the likelihood of it achieving its economic and service delivery objectives.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Cost/benefit analysis carried out on the economic viability of the project. • Business case detailing the economic and service delivery requirements of the project. • Confidence in short and long-term economic viability. • Plan for future auditing and monitoring program. • Confidence in ability to meet specific electricity system needs as per business case requirements. 	<ol style="list-style-type: none"> 1. Verifying completion of a cost / benefit analysis. 2. Reviewing the business case and associated economic and service delivery requirements. 3. Assessing confidence levels in short and long-term economic viability and ability to meet specific electricity needs. 4. Assessing the suitability and adequacy of plans for future monitoring, auditing, and reporting.

A8 Aspect: Markets, innovation, and research.

Understanding of short and long-term market conditions and ability to respond to potential changes through, for example, research and development programs.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Short and long-term market conditions. • Plan to address potential changes in market conditions. • Innovation and research planning. 	<ol style="list-style-type: none"> 1. Level of understanding of short and long-term market conditions. 2. Assessing capability to identify and address potential changes in market conditions. 3. Assessing plans for research and development for long-term business positioning.

A9 Aspect: Additional benefits and capacity building.

Assessing the range and value of additional benefits associated with the scheme and the potential for them to be effectively delivered.

Considerations	Assessment Requirements
<p>The range, value, and effectiveness of delivery of additional benefits to directly affected stakeholders and the broader community. Six areas are identified:</p> <ul style="list-style-type: none"> • Development of indigenous resources; • Direct and indirect employment; • Education, transfer of knowledge, and capacity building; • Improved health care (new facilities, improved water supplies, provision of electricity); • National development and additional economic activities, e.g., new industries; • Additional amenities and multi-purpose benefits, e.g., recreation, infrastructure (roads, electricity supply), flood control. 	<ol style="list-style-type: none"> 1. Assessing the range and value of the benefits to be delivered (e.g., high value, moderate, etc.). 2. Demonstrating that benefits will be delivered to both affected stakeholders and the broader community. 3. Determining how much uncertainty is there in the planning about the benefits that can be delivered. 4. Identifying gaps in planning. 5. Assessing assistance in local employment creation, especially in relation to disadvantaged groups.

A10 Aspect: Short and long-term reliability.

Assessing the likely reliability of the power scheme in the context of the broader system.

Considerations	Assessment Requirements
<p>The likely short-term and long-term reliability of the power scheme in the context of the broader system. This includes reliability of the generation and network assets and the fuel resource.</p>	<ol style="list-style-type: none"> 1. Analysing the future reliability of assets and the fuel resource. 2. Assessing the suitability and adequacy of planning for asset and fuel resource management strategies/systems (including emergency preparedness program). 3. Planned level of reliability performance of the power scheme and the likelihood of this occurring. This includes fuel supply and assets on both a short-term and long-term basis.

A11 Aspect: Planned operational efficiency.

Assessing the planned operational efficiency of the project in the context of the broader system and relevant market arrangements. Also assessing the efficiency of the conversion of primary energy to electrical energy and the relative efficiency of the proposed option as compared to similar technology options.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Planned operational efficiency of the project in the context of the broader system and relevant market arrangements. • Planned management of the fuel resource, design efficiency of the power station assets (e.g., turbines), and planned and/or existing efficiency of the network assets. • The efficiency of the conversion of primary energy to electrical energy. • Energy payback ratio -- the ratio of energy produced during the normal lifespan of a power plant divided by the energy required to build, maintain, and fuel the generating equipment. • The relative efficiency of the proposed option as compared to similar technology options. 	<ol style="list-style-type: none"> 1. Analysing likely short and long-term resource and asset efficiency. 2. Identifying any efficiency constraints or opportunities arising from broader system configuration and relevant market arrangements. 3. Planning to maximise efficiency of fuel resource and assets over the life of the project. 4. Determining the expected level primary energy conversion efficiency. 5. Determining the energy payback ratio for the project. 6. Assessing the expected efficiency performance of the project compared to similar technology type and circumstances.

A12 Aspect: Community acceptance.

Assessing the likely degree of community support for the project, and the planning for and processes used to gain and measure that support. Also assessing plans for ongoing stakeholder feedback, and measurement and reporting of sustainability performance.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Level of community support and/or level of community opposition. • Planned or actual stakeholder consultation process. • Plans for ongoing stakeholder feedback and measurement and reporting of sustainability performance. 	<ol style="list-style-type: none"> 1. Assessing the strength of community support and the level of community opposition. 2. Assessing the suitability, adequacy, and effectiveness of stakeholder consultation planned or in place. 3. Assessing the suitability and adequacy of plans for future stakeholder feedback. 4. Assessing the suitability and adequacy of plans for future measurement and reporting of sustainability performance.

A13 Aspect: Social impact assessment and management planning.

Examining the suitability, adequacy, and effectiveness of social impact assessments or plans to carry out assessments. Also examining the acceptance and likelihood of successful implementation of compensation, mitigation, and/or enhancement strategies.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Community values and issues. • Completed or planned social impact assessments. • Level of stakeholder consultation and involvement in development of plans. • Consistency of plans with relevant legislation and international standards. • Planned compensation, mitigation, and/or enhancement strategies • Level of stakeholder consultation and involvement in development of compensation, mitigation, or enhancement strategies. • Community and regulator support for compensation, mitigation, or enhancement strategies. 	<ol style="list-style-type: none"> 1. Level of understanding of community values and issues. 2. Suitability and adequacy of completed or planned social impact assessments. 3. Determining the level of stakeholder consultation and involvement in both the development of plans and the development of compensation, mitigation, or enhancement strategies. 4. Assessing the acceptance of the plans and proposed compensation, mitigation, or enhancement strategies by the community, regulators, and other stakeholders. 5. Assessing the likely effectiveness of the plans and proposed compensation, mitigation, or enhancement strategies.

A14 Aspect: Extent and severity of social, economic, and cultural impacts on directly affected stakeholders.

Measuring the extent and severity of social, economic, and cultural impacts on directly affected stakeholders (including vulnerable social groups). Also looking at likely effectiveness of plans to provide enhancements, avoid impacts and/or mitigate and compensate for those impacts.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Social, economic, and cultural impacts on directly affected stakeholders (including vulnerable social groups). • Requirements for voluntary or forced resettlement programs. • Requirements for social, economic, or cultural mitigation and/or compensation programs. • Opportunities for social or cultural enhancement programs. • Involvement and acceptance of plans and programs by directly affected stakeholders. 	<ol style="list-style-type: none"> 1. Measuring the level of social, economic, and cultural impacts on directly affected stakeholders (including vulnerable social groups). 2. Assessing the likelihood of solving those social, economic, and cultural impacts. 3. Measuring the requirement for resettlement, and the acceptance and effectiveness of any resettlement program. 4. Measuring the identification of opportunities for social or cultural enhancement programs, and the likelihood of implementation and effectiveness of these programs. 5. Determining the level of consultation with directly affected stakeholders, and involvement in both the development of plans and the development of avoidance, compensation, mitigation, or enhancement strategies. 6. Assessing the acceptance of the plans and proposed avoidance, compensation, mitigation, or enhancement strategies by directly affected stakeholders. 7. Assessing the likely effectiveness of the plans and proposed avoidance, compensation, mitigation, or enhancement strategies.

A15 Aspect: Safety issues and hazards.

Assessing asset safety, public safety, employee safety.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Predicted safety performance. • Safety and emergency preparedness program. • Compliance with appropriate legislation, national and international standards, and relevant industry practice. 	<ol style="list-style-type: none"> 1. Measuring the understanding of safety issues and hazards. 2. Looking at planning of the safety program. 3. Examining consistency with legislation, appropriate national and international standards, and relevant industry practice 4. Assessing likely effectiveness of the safety program.

A16 Aspect: Cultural heritage.

Looking at the level of impact and planning for protection and conservation of historic and indigenous heritage values.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Protection and conservation of historic and indigenous heritage values. • Completed or planned cultural heritage assessments. • Consistency of plans with relevant legislation and international standards. • Likelihood of meeting protection and conservation requirements / targets. • Level of stakeholder and regulator agreement on program. 	<ol style="list-style-type: none"> 1. Level of understanding of historic and indigenous heritage values and issues. 2. Suitability and adequacy of completed or planned cultural heritage assessments. 3. Assessing the consistency of plans with relevant legislation and international standards. 4. Assessing the likely effectiveness of plans. 5. Assessing the acceptance of the plans, and proposed compensation, mitigation, or enhancement strategies by the community, regulators, and other stakeholders.

A17 Aspect: Environmental impact assessment and management planning.

Examining the suitability, adequacy, and effectiveness, of environmental impact assessments or plans to carry out assessments. Also examining the acceptance and likelihood of successful implementation of compensation, mitigation, and/or enhancement strategies.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Completed or planned environmental impact assessments. • Suitability and adequacy of planned compensation, mitigation, and/or enhancement strategies • Community and regulator support for environmental impact assessments, environmental management plans, and compensation, mitigation, or enhancement strategies. • Commitment to implement an effective environmental management system. 	<ol style="list-style-type: none"> 1. Suitability and adequacy of completed or planned environmental impact assessments. 2. Assessing the likely effectiveness of the plans and proposed compensation, mitigation, or enhancement strategies. 3. Determining the level of stakeholder consultation and involvement in both the development of plans and the development of compensation, mitigation, or enhancement strategies. 4. Assessing the acceptance of the plans and proposed compensation, mitigation, or enhancement strategies by the community, regulators, and other stakeholders. 5. Determining commitment to implement an effective environmental management system.

A18 Aspect: Extent and severity of predicted environmental impacts.

Measuring the predicted extent and severity of environmental impact due to the project. This extent and severity of impact relates to:

- the areal extent affected, both on a direct and indirect (incremental) basis;
- the amount of potential detrimental or positive impact;
- the value of the environment upon which the impact occurs; and
- the degree to which it can be avoided, mitigated, compensated, or enhanced.

Environmental value relates to uniqueness, rarity, and existence of threatened or endangered species or habitat.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • The environmental value of the areal impact. • The areal extent directly affected by the project, e.g., construction site. • The areal extent indirectly affected by the project, e.g., air shed discharge areas, view fields. • Planned avoidance, mitigation, compensation, and enhancement strategies. 	<ol style="list-style-type: none"> 1. Assessing the environmental value of the area impacted, particularly in relation to uniqueness, rarity, and the existence of threatened or endangered species or habitat. 2. Assessing the areal extent of direct impacts. 3. Assessing the areal extent of indirect impacts. 4. Assessing the adequacy and suitability of planned avoidance, mitigation, compensation, or enhancement programs. 5. Determining the likely effectiveness of these programs.

A19 Aspect: Air, water, and ground emissions, and waste management.

Assessing projected air, water, and ground emissions over the life of the scheme in terms of quantity, environmental consequence, and management costs. This includes management of waste products.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Level of projected air, water, and ground emissions over the life of the scheme. • Environmental consequence and hazard associated with those emissions. • Waste management strategies, including reuse, recycling, treatment, storage, and disposal. • Management costs associated with emissions and waste. 	<ol style="list-style-type: none"> 1. Assessing the nature, amount, hazard, and environmental consequence of projected emissions over the life of the scheme. 2. Assessing the adequacy and suitability of waste management strategies. 3. Determining likely emissions and waste management costs over the life of scheme.

A20 Aspect: Greenhouse gases.

Assessing the projected greenhouse gas performance over the life of the scheme.

Considerations	Assessment Requirements
<ul style="list-style-type: none"> • Likely direct and indirect greenhouse gas emissions over the life of the scheme. • Level of projected greenhouse gas emissions compared against energy output. 	<ol style="list-style-type: none"> 1. Determining the level of direct and indirect greenhouse gas emissions over the life of the scheme. 2. Calculating a CO₂ equivalent per GWh for the scheme.

IHA Sustainability Assessment Protocol - Section B - Assessing New Hydro Projects

This sustainability assessment uses a scoring system from 5 to 0 for twenty fundamental aspects of economic, social, and environmental sustainability pertaining to new hydro projects. These aspects have been drawn from the IHA's *Sustainability Guidelines*.

A score of 3 is considered satisfactory and essentially meets the requirements of the *Sustainability Guidelines*. Lower scores indicate significant gaps and/or poor sustainability performance.

A score of 4 indicates high standard performance, occasionally exceeding the requirements of the *Sustainability Guidelines*, with only very minor gaps.

A score of 5 exceeds the requirements of the *Sustainability Guidelines* and is at, or very near, international best practice as applied to the actual / local situation.

The document is designed to look at individual facilities, but for some circumstances, it may be necessary to use groups of facilities.

The table below explains the general intent of ratings from 5 through to 0.

Scoring for each Sustainability Assessment Aspect

Score	Performance	Description
5	Outstanding / Strong / Comprehensive	<ul style="list-style-type: none"> At or very near international best practice. Suitable, adequate, and effective planning and management systems. Meets or exceeds objectives and measurable targets.
4	Good to Very Good	<ul style="list-style-type: none"> High standard performance. Generally suitable, adequate, and effective (minor gaps only) planning and management systems. Meets most objectives and measurable targets including all critical ones.
3	Satisfactory	<ul style="list-style-type: none"> Essentially meets the requirements of the <i>Sustainability Guidelines</i> (no major gaps). Generally compliant with regulations and commitments (minor exceptions only). Some non-critical gaps in planning and management systems. Some non-critical gaps in meeting objectives and measurable targets.
2	Less than satisfactory	<ul style="list-style-type: none"> Gaps in meeting the requirements of the <i>Sustainability Guidelines</i>. Some gaps in compliance with regulations and commitments. Gaps in planning and management systems. Gaps in meeting objectives and measurable targets.
1	Poor / Very Limited	<ul style="list-style-type: none"> Poor performance. Major gaps in compliance with regulations and commitments. Major gaps in planning and management systems. Major gaps in meeting objectives and measurable targets.
0	Very Poor	<ul style="list-style-type: none"> No evidence of meeting the requirements of the <i>Sustainability Guidelines</i>. Very poor performance or failure to address fundamental issues. Little or no compliance with regulations and commitments. Ineffective or absent planning or management systems. Fails to meet objectives and measurable targets.

Assessment Details

Scheme(s)	
Location details	
Date of assessment	
Name and position / organisation of person(s) carrying out assessment	
Details of persons / organisations consulted during assessment	
Signature of authorising officer	

Summary of Aspects and Scores (New Hydro Projects)

No.	Aspect	Score	No.	Aspect	Score
B1	Political risk and regulatory approval		B11	Safety	
B2	Economic viability		B12	Cultural heritage	
B3	Additional benefits		B13	Environmental impact assessment and management plan	
B4	Planned operational efficiency and reliability		B14	Threshold and cumulative environmental or social impacts	
B5	Project management plan		B15	Construction and associated infrastructure impacts	
B6	Site selection and design optimisation		B16	Land management and rehabilitation	
B7	Community and stakeholder consultation and support		B17	Aquatic biodiversity	
B8	Social impact assessment and management plan		B18	Environmental flows and reservoir management	
B9	Predicted extent and severity of economic and social impacts on directly affected stakeholders		B19	Reservoir and downstream sedimentation and erosion risks	
B10	Enhancement of public health and minimisation of public health risks		B20	Water quality	

B1 Aspect: Political risk and regulatory approval.		
Measures the level of sovereign risk and likelihood of regulatory approval.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Political environment and sovereign risk	Regulatory approval
5	Stable political environment and low sovereign risk.	Regulatory approval obtained or likely to be obtained.
4	Minor political instability and/or sovereign risk issues with a high degree of confidence that these will not pose a threat to the project.	Regulatory approval likely to be obtained with minor uncertainty in timing or conditions.
3	Political instability and/or sovereign risk issues with a good degree of confidence that these will not pose a significant threat to the project.	Regulatory approval probable but some uncertainty in timing or conditions.
2	Political instability and/or sovereign risk issues with a moderate degree of uncertainty about the risks posed to the project.	Some level of risk of non-approval or moderate risk of long delays and/or unreasonable conditions.
1	Political instability and/or sovereign risk issues with a likelihood that these pose major risks to the project.	Moderate level of risk of non-approval or likelihood of long delays and/or unreasonable conditions.
0	Political instability and/or sovereign risk issues with a likelihood that these make the project unviable.	Regulatory approval unlikely to be obtained.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Regulatory agreements. 2. Interviews with regulators. 3. Authoritative assessment of political stability / sovereign risks. 4. Authoritative assessment of likelihood of approval, including timeframes and conditions.
	Definitions	Sovereign risk: The risk that a government may unilaterally repudiate its obligations or prevent others in its jurisdiction from honouring their obligations, e.g., preventing local firms from honouring their foreign obligations. Sovereign risk is often regarded as a subset of political risk.

B2 Aspect: Economic viability.

- Cost / benefit analysis has been undertaken on the economic viability of the project, and
- Auditing / monitoring of economic performance is planned.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Cost benefit analysis and predicted performance	Process
5	Analysis carried out and indicates very high confidence of economic viability.	Suitable and adequate plan for future auditing / monitoring program.
4	Analysis carried out and indicates strong confidence of economic viability.	Suitable and adequate plan for future auditing / monitoring program.
3	Analysis carried out and indicates adequate confidence of economic viability.	Minor gaps in planning for future auditing / monitoring program.
2	Analysis carried out and indicates some degree of uncertainty in relation to economic viability.	Large gaps in planning for future auditing / monitoring program.
1	Analysis carried out and indicates high degree of uncertainty in relation to economic viability.	Very limited planning for future auditing / monitoring program.
0	No analysis carried out OR likelihood of project failing to meet fundamental economic objectives.	No program planned.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	
	<ol style="list-style-type: none"> 1. Business plan. 2. Business charter. 3. Agreements with shareholders on planned benchmarks and targets. 4. Cost / benefit analysis. 5. Auditing and monitoring plans. 6. Independent analysis, e.g., by scheme financiers. 	

B3 Aspect: Additional economic benefits.

The value, and the potential to be effectively delivered, of additional benefits to directly affected stakeholders and the broader community. These benefits can include:

- a) direct and indirect employment;
- b) education, transfer of knowledge, and capacity building;
- c) improved health care (new facilities, improved water supplies, provision of electricity);
- d) national development and additional economic activities, e.g., new industries;
- e) additional amenity, e.g., recreation and infrastructure (roads, electricity supply).

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Value and distribution of additional benefits	Process to deliver additional benefits
5	Project delivers large range of high value benefits to directly affected stakeholders and the broader community.	Planning in place and high level of confidence that benefits can be delivered.
4	Project delivers high value benefits in four of the major areas to directly affected stakeholders and the broader community.	Planning in place and minor degree of uncertainty that benefits can be delivered.
3	Project delivers large to moderate value benefits in three or four of the major areas with the principal focus on directly affected stakeholders.	Some gaps in planning and some degree of uncertainty that benefits can be delivered.
2	Project delivers only moderate value benefits in two to three of the major areas to some of the directly affected stakeholders.	Moderate gaps in planning and moderate degree of uncertainty that benefits can be delivered.
1	Project delivers only low value benefits in two of the major areas to a limited number of directly affected stakeholders.	Large gaps in planning and high degree of uncertainty that benefits can be delivered.
0	Project will deliver only limited employment opportunities.	No planning OR benefits unlikely to be delivered.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Identification of types and range of additional benefits. 2. Plans to measure effectiveness of additional benefits. 3. Evidence of stakeholder support. 4. Identification of stakeholders. 5. Assessment of opportunity. 6. Independent assessment of plans and proposals.
	Definitions	Opportunity: the feasibility and practicability of delivering additional benefits. Consideration should be given to issues such as the nature of the local community, existing infrastructure, economic constraints, and political environment.

B4 Aspect: Planned operational efficiency and reliability.

Assesses the planned operational efficiency of the project in the context of the broader system and relevant market arrangements.

The assessment looks at three specific areas:

1. planned management of the hydrological resource;
2. design efficiency of the power station assets (e.g., turbines); and
3. planned and/or existing efficiency of the network assets.

It also assesses the likely reliability of the power scheme in the context of the broader system and includes short-term and long-term reliability of the hydrological resource, power station assets (e.g., turbines and generators), and network assets.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Likely level of performance	Process
5	<ul style="list-style-type: none"> • High likelihood of optimum practicable efficiency in management of the hydrological resource, the power station assets, and the network assets. • High likelihood of outstanding reliability performance of hydrological resource and assets on both a short-term and long-term basis. 	<ul style="list-style-type: none"> • High standard analysis of the hydrological resource and likely future efficiency and reliability of assets. • Planning for comprehensive asset and hydrological resource management strategies/systems (including emergency preparedness program).
4	Likelihood of good efficiency and reliability performance and only minor uncertainties in relation to this continuing over the long term.	<ul style="list-style-type: none"> • Good analysis of the hydrological resource and likely future efficiency and reliability of assets. • Planning for good asset and hydrological resource management strategies/systems (including emergency preparedness program).
3	Likelihood of satisfactory efficiency and reliability performance and some uncertainties in relation to this continuing or being improved over the long term.	<ul style="list-style-type: none"> • Some gaps in the analysis of the hydrological resource and likely future efficiency and reliability of assets. • Some gaps in the planning for asset and hydrological resource management strategies/systems (including emergency preparedness program).
2	Likelihood of less than satisfactory efficiency and reliability performance and some uncertainties in relation this continuing or being improved over the long term.	<ul style="list-style-type: none"> • Large gaps in the analysis of the hydrological resource and likely future efficiency and reliability of assets. • Large gaps in the planning for asset and hydrological resource management strategies/systems (including emergency preparedness program).
1	Likelihood of less than satisfactory efficiency and reliability performance and likelihood that this will continue or worsen over the long term.	<ul style="list-style-type: none"> • Limited analysis of the hydrological resource and likely future efficiency and reliability of assets. • Major gaps in the planning for asset and hydrological resource management strategies/systems (including emergency preparedness program).
0	Likelihood of near worst practice for efficiency and reliability performance and likelihood that this will continue over the long term.	<ul style="list-style-type: none"> • No analysis of the hydrological resource and likely future efficiency and reliability of assets. • Absence of planning for asset and hydrological resource management strategies/systems (including emergency preparedness program).
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	<ol style="list-style-type: none"> 1. Assessment of likely asset performance. 2. Proposed power station asset management strategies. 3. Emergency / unusual event plans. 4. Analysis of long-term resource availability. 5. Contingencies to cope with future changes to resource reliability. 	
Examples of Evidence		

B5 Aspect: Project management plan.		
Assesses the proponent's ability to design and construct the project.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Planning for project implementation	Resource competency and availability
5	Comprehensive planning for the design and construction phases of the project.	Competent design and construction resources available during the required timeframes.
4	Good planning for the design and construction phases of the project.	Very low level of uncertainty in relation to either competency or availability of design and construction resources.
3	Minor gaps in the planning for the design and construction phases of the project.	Low level of uncertainty in relation to either competency or availability of design and construction resources.
2	Large gaps in the planning for the design and construction phases of the project.	Moderate level of uncertainty in relation to either competency or availability of design and construction resources.
1	Very large gaps in the planning for the design and construction phases of the project.	High degree of uncertainty in relation to either competency or availability of design and construction resources.
0	No plans.	Resources either not competent or available.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Project management plan. 2. Project risk analysis. 3. Evidence of resource availability. 4. Evidence of resource suitability and/or competency.

B6 Aspect: Site selection and design optimisation.

Measures the planning for, or implementation of site selection and design optimisation that:

- avoids exceptional environmental and cultural heritage sites;
- minimises disturbance to existing features and activities (e.g., practicable reduction in flooded area in relation to GWh output); and
- maximises economic, social, and environmental opportunities.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Optimal site selection and design that has comprehensively factored in, or is likely to comprehensively factor in: <ul style="list-style-type: none"> • avoidance of exceptional environmental and cultural heritage sites; • practicable minimisation of disturbance to existing features and activities; and • practicable maximisation of economic, social, and environmental opportunities. 	Thorough understanding of optimisation requirements and opportunities OR suitable and adequate plan that will likely result in a thorough understanding.
4	Good site selection and design that has factored in, or is likely to factor in: <ul style="list-style-type: none"> • avoidance of exceptional environmental and cultural heritage sites; • practicable minimisation of disturbance to existing features and activities; and • practicable maximisation of economic, social, and environmental opportunities. 	Good understanding of optimisation requirements and opportunities OR plan that will likely result in a good understanding.
3	Satisfactory site selection and design that has, or is likely to have, a low level of uncertainty about how well consideration has been given to: <ul style="list-style-type: none"> • avoidance of exceptional environmental and cultural heritage sites; • practicable minimisation of disturbance to existing features and activities; and • practicable maximisation of economic, social, and environmental opportunities. 	Adequate understanding of optimisation requirements and opportunities OR plan that will likely result in an adequate understanding.
2	Less than satisfactory site selection and design that has, or is likely to have, gaps in consideration of: <ul style="list-style-type: none"> • avoidance of exceptional environmental and cultural heritage sites; • practicable minimisation of disturbance to existing features and activities; and • practicable maximisation of economic, social, and environmental opportunities. 	Less than satisfactory understanding of optimisation requirements and opportunities OR plan that will likely result in a less than satisfactory understanding
1	Poor site selection and design that has, or is likely to have, major gaps in consideration of: <ul style="list-style-type: none"> • avoidance of exceptional environmental and cultural heritage sites; • practicable minimisation of disturbance to existing features and activities; and • practicable maximisation of economic, social, and environmental opportunities. 	Poor understanding of optimisation requirements and opportunities OR plan that will likely result in a poor understanding
0	Site selection and design that has, or is likely to have, no consideration of: <ul style="list-style-type: none"> • avoidance of exceptional environmental and cultural heritage sites; • practicable minimisation of disturbance to existing features and activities; and • practicable maximisation of economic, social, and environmental opportunities. 	No understanding of optimisation requirements and opportunities OR no plan to gain that understanding.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Site selection criteria and assessment. 2. Design criteria, planning process, verification, and reviews. 3. Calculation of flooded area in relation to GWh output. 4. Records of design change to avoid or minimise disturbance and/or maximise opportunities. 5. Independent assessment of exception environmental and cultural heritage sites. 6. Interviews with designers.
	Definitions	Exceptional environmental and cultural heritage sites: Sites with unique environmental or cultural heritage features of international importance, e.g., World Heritage sites.

B7 Aspect: Community and stakeholder consultation and support.		
Assesses the likely degree of community support for the project, and the planning for and processes used to gain that support.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Likely degree of community acceptance (performance)	Process
5	High likelihood of strong community support OR no significant community opposition.	Comprehensive stakeholder consultation process planned or in place.
4	Good level of community support OR minor community opposition most probable outcome.	Planning or implementation indicates good stakeholder consultation process with very few gaps in suitability, adequacy, or effectiveness.
3	Likelihood of satisfactory level of community support OR some community opposition.	Planning or implementation indicates satisfactory stakeholder consultation process with some gaps in suitability, adequacy, or effectiveness.
2	Limited community support OR moderate level of community opposition most probable outcome.	Planning or implementation indicates significant gaps in consultation process suitability, adequacy, or effectiveness.
1	Likelihood of low level of community support OR high level of community opposition that is not broad-based.	Planning or implementation indicates weak consultation process program, largely unsuitable, inadequate, or ineffective.
0	Likely high level of broad-based community opposition.	No stakeholder consultation process planned or in place.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Written agreements with stakeholders or plans for agreements. 2. Records of interviews. 3. Results of surveys or polls. 4. Minutes of meetings with stakeholder groups. 5. Various process documentation. 6. Stakeholder and issue identification. 7. Determining objectives and targets. 8. Methodologies used or planned, including consultation strategies, resources, timings, information sharing. 9. Stakeholder input and feedback.

B8 Aspect: Social impact assessment and management plan.

A social impact assessment is planned or has been undertaken for the project and it:

- has or will thoroughly identify relevant issues;
- has or will include appropriate levels of stakeholder consultation; and
- has or will recommend effective and community and regulator-supported mitigation, compensation, and / or enhancement.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Strong community and regulator support for any actual or planned mitigation, compensation, and/or enhancement strategies.	Comprehensive social impact assessment process planned or in place.
4	Good community and regulator support for any actual or planned mitigation, compensation, and/or enhancement strategies.	Planning or implementation indicates good social impact assessment process with very few gaps in suitability, adequacy, or effectiveness.
3	General community and regulator support for any actual or planned mitigation, compensation, and/or enhancement strategies.	Planning or implementation indicates satisfactory social impact assessment process with minor gaps in suitability, adequacy, or effectiveness.
2	Significant community or regulator opposition for any actual or planned mitigation, compensation, and/or enhancement strategies.	Planning or implementation indicates significant gaps in social impact assessment process suitability, adequacy, or effectiveness.
1	Very little support OR high level of community or regulator opposition for any actual or planned mitigation, compensation, and/or enhancement strategies.	Planning or implementation indicates weak social impact assessment process, largely unsuitable, inadequate, or ineffective.
0	No community and regulator support, OR major broad-based opposition for any actual or planned mitigation, compensation, and/or enhancement strategies.	No social impact assessment process planned or in place.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Plans for social impact assessment or the actual assessment. 2. Identification of directly affected stakeholders. 3. Plans for involvement and/or consultation with directly affected stakeholders during assessment process. 4. Records of stakeholder involvement. 5. Interviews with regulators and stakeholders. 6. Agreements with stakeholders and/or regulators.

B9 Aspect: Predicted extent and severity of economic and social impacts on directly affected stakeholders.	
<p>Measures the potential extent and severity of economic and social impacts on directly affected stakeholders (including vulnerable social groups). It also looks at plans to avoid impacts and/or mitigate and compensate for those impacts. As well, it considers plans for improving present conditions through enhancement programs. Assessment includes a prediction of likely outcomes.</p> <p>Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.</p>	
Score	Performance
5	<ul style="list-style-type: none"> No impacts through to moderate impacts. High confidence that directly affected stakeholders will not be economically, socially, or culturally disadvantaged
4	<ul style="list-style-type: none"> Minor impacts through to moderate impacts. Likelihood that directly affected stakeholders will not be economically, socially, or culturally disadvantaged
3	<ul style="list-style-type: none"> Minor impacts through to very large impacts. Low level of uncertainty that directly affected stakeholders will not be economically, socially, or culturally disadvantaged.
2	<ul style="list-style-type: none"> Moderate impacts through to very large impacts. Likelihood that some directly affected stakeholders will be economically, socially, or culturally disadvantaged.
1	<ul style="list-style-type: none"> Moderate impacts through to very large impacts. Likelihood that most directly affected stakeholders will be economically, socially, or culturally disadvantaged.
0	<ul style="list-style-type: none"> Very large unsolvable impacts OR no assessment of the situation.
Comments (attach additional pages if more space is required)	
Auditing Guidance Notes	<ol style="list-style-type: none"> Independent review of the social impact assessment. Authoritative opinion on the level of social impact. Mitigation / compensation / enhancement plans or programs. Agreements with stakeholders and regulators. Interviews with stakeholders and regulators.
Examples of Evidence	

B10 Aspect: Enhancement of public health and minimisation of public health risks.

A public health assessment of the project that considers:

- areas of risk;
- measures to manage risk; and
- opportunities to provide public health benefits (e.g., improved supplies of electricity and water, increased employment, flood mitigation).

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Significant increase in public health benefits and minor to moderate public health risks OR not relevant due to absence of any affected population.	<ul style="list-style-type: none"> • Comprehensive assessment. • Suitable and adequate planning for delivery of public health enhancements OR likelihood of suitable and adequate planning.
4	Enhanced public health benefits and minor to moderate public health risks.	<ul style="list-style-type: none"> • Good assessment. • Few gaps in planning for delivery of public health enhancements OR likelihood of only few gaps in planning.
3	No increase or decrease in public health benefits for local community and minor to major public health risks.	<ul style="list-style-type: none"> • Where risks are minor to moderate, few gaps OR likelihood of few gaps in assessment and planning. • Where risks are major, adequate and suitable assessment and planning OR likelihood of adequate and suitable assessment and planning.
2	No increase or decrease in public health benefits for local community and moderate to major public health risks.	<ul style="list-style-type: none"> • Where risks are moderate, significant gaps, OR likelihood of significant gaps in assessment and planning. • Where risks are major, some gaps OR likelihood of some gaps in assessment and planning.
1	Decrease in public health benefits for local community and moderate to major public health risks.	<ul style="list-style-type: none"> • Where risks are moderate, major gaps OR likelihood of major gaps in assessment or planning. • Where risks are major, significant gaps OR likelihood of significant gaps in assessment and planning.
0	Significant decrease in public health benefits for local community and major public health risks.	No assessment or planning.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Public health risk assessment. 2. Assessment of public health enhancement opportunities. 3. Agreements with regulators and stakeholders. 4. Interviews with regulators and stakeholders. 5. Public health management plans. 6. Planned monitoring program.

B11 Aspect: Safety.		
Safety planning is assessed relative to appropriate national and international standards and comparable industry practice.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Performance	Process
5	Predicted outstanding safety performance.	Planned high standard safety program consistent with relevant international and/or national standards and leading edge relative to industry practice.
4	Predicted good safety performance.	Planned good safety program with very few gaps but does not quite meet relevant international and/or national standards and/or industry practice.
3	Predicted satisfactory safety performance.	Planned adequate safety program with minor gaps.
2	Predicted less than satisfactory safety performance.	Significant gaps in planned safety program.
1	Predicted poor safety performance.	Planned weak safety program, largely unsuitable or inadequate.
0	Predicted very poor safety performance.	Absence of safety program.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Safety and legal compliance requirements. 2. Independent review of proposed asset safety plans or measures. 3. Issue identification and risk assessment. 4. Determining objectives and targets, safety planning. 5. Incorporation of standards and other requirements in plans. 6. Emergency preparedness planning.

B12 Aspect: Cultural heritage.

Looks at the level of impact and planning for protection and conservation of historic and indigenous heritage values.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> Nearly all protection and conservation requirements / targets met or likely to be met. Strong agreement on program with regulators and other stakeholders. 	Comprehensive cultural heritage assessment process, consistent with relevant legislation and international standards, planned or in place.
4	<ul style="list-style-type: none"> Most protection and conservation requirements / targets met or likely to be met. Good agreement on program with regulators and other stakeholders. 	<ul style="list-style-type: none"> Planning or implementation indicates good cultural heritage assessment process with very few gaps in suitability or adequacy. Process is generally consistent with relevant legislation and international standards.
3	<ul style="list-style-type: none"> Early stage in meeting protection and conservation requirements / targets OR variable progress. Program is or will be generally compliant with legislative obligations. Variable level of agreement on program with regulators and other stakeholders and/or some minor opposition. 	<ul style="list-style-type: none"> Planning or implementation indicates satisfactory cultural heritage assessment process with minor gaps in suitability or adequacy. Process generally consistent with relevant legislation and international standards with minor gaps, or process in early phase of development.
2	<ul style="list-style-type: none"> Significant gaps, likely or actual, in meeting protection and conservation requirements / targets. Some gaps, likely or actual, in complying with legislative obligations. Low level of agreement on program with regulators and other stakeholders and/or significant opposition. 	<ul style="list-style-type: none"> Significant gaps in understanding of values and issues. Plans with gaps in either coverage or consistency with relevant legislation and international standards. Planning or implementation indicates significant gaps in social impact assessment process suitability or adequacy.
1	<ul style="list-style-type: none"> Major gaps, likely or actual, in meeting protection and conservation requirements / targets. Significant gaps, likely or actual, in complying with legislative obligations. Limited agreement on program with regulators and other stakeholders and/or major opposition. 	<ul style="list-style-type: none"> Major gaps in understanding of values and issues. Plans with significant gaps in either coverage or consistency with relevant legislation and international standards. Planning or implementation indicates weak social impact assessment process, largely unsuitable or inadequate.
0	<ul style="list-style-type: none"> Major gaps, likely or actual, in complying with legislative obligations. 	<ul style="list-style-type: none"> Limited understanding of values and issues. No plans in place. No social impact assessment process planned or in place.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Conservations plans. 2. Heritage impact statements. 3. Heritage plans and agreements. 4. Interviews with regulators and other stakeholders. 5. Physical inspection of sites. 6. Independent assessment of plans and proposals.

B13 Aspect: Environmental impact assessment and management system.

An environmental impact assessment is planned or has been undertaken for the project and it:

- has or will thoroughly identify relevant issues;
- has or will include appropriate levels of stakeholder consultation; and
- has or will recommend effective and community and regulator-supported mitigation, compensation, and / or enhancement.

An environmental management system (including appropriate environmental management plans) is planned for both the construction and operational phases of the project.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Strong community and regulator support for any actual or planned mitigation, compensation, and/or enhancement strategies	<ul style="list-style-type: none"> • Comprehensive environmental impact assessment process planned or in place. • Comprehensive environmental management system, which will be independently certified to a relevant international standard, is planned for both the construction and operational phases of the project.
4	Good community and regulator support for any actual or planned mitigation, compensation, and/or enhancement strategies	<ul style="list-style-type: none"> • Planning or implementation indicates good environmental impact assessment process with very few gaps in suitability, adequacy, or effectiveness. • Comprehensive environmental management system, which will conform to a relevant international standard, is planned for both the construction and operational phases of the project.
3	General community and regulator support for any actual or planned mitigation, compensation, and/or enhancement strategies	<ul style="list-style-type: none"> • Planning or implementation indicates satisfactory environmental impact assessment process with minor gaps in suitability, adequacy, or effectiveness. • Good environmental management system, which has only minor gaps when measured against a relevant international standard, is planned for both the construction and operational phases of the project.
2	Significant community or regulator opposition for any actual or planned mitigation, compensation, and/or enhancement strategies	<ul style="list-style-type: none"> • Planning or implementation indicates significant gaps in environmental impact assessment process suitability, adequacy, or effectiveness. • Gaps in planned environmental management system.
1	Very little support OR high level of community or regulator opposition for any actual or planned mitigation, compensation, and/or enhancement strategies	<ul style="list-style-type: none"> • Planning or implementation indicates weak environmental impact assessment process, largely unsuitable, inadequate, or ineffective. • Significant gaps in planned environmental management system.
0	No community and regulator support, OR major broad-based opposition for any actual or planned mitigation, compensation, and/or enhancement strategies	<ul style="list-style-type: none"> • No environmental impact assessment process planned or in place. • No plans for an environmental management system.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Plans for environmental impact assessment or the actual assessment. 2. Identification and risk assessment of environmental issues. 3. Interviews with regulators and stakeholders. 4. Agreements with stakeholders and/or regulators. 5. Stakeholder and regulator consultation plans. 6. Independent expert testimony on EIA plans or content.

B14 Aspect: Threshold and cumulative environmental or social impacts.

Where a new project is proposed for an unregulated river system, an assessment has been made of the potential for a project delivering equivalent benefits on an already developed river in the same region. If an alternative feasible option is identified on a previously developed river, its cumulative and other environmental or social impacts are also assessed.

Preference should be given to development on previously developed river basins if the cumulative and other environmental or social impacts are less than the impacts of new development on an unregulated river system.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Regulatory or proponent option assessment on regulated and unregulated river systems in a given region	Choosing options
5	Comprehensive assessment covering regulated and any unregulated river systems in the region.	<ul style="list-style-type: none"> The project is being proposed for an already developed river basin and cumulative or other environmental or social impacts are not greater than environmental or social impacts on an alternative new development on an unregulated river system OR Clearly demonstrated absence of acceptable alternatives on already developed basins in the region AND The option selected is the best available.
4	Good assessment covering regulated and any unregulated river systems in the region.	Very low level of uncertainty about the choice of options selected.
3	Satisfactory assessment covering regulated and any unregulated river systems in the region.	Minor degree of uncertainty about the choice of options selected.
2	Significant gaps in assessment covering regulated and any unregulated river systems in the region.	Significant degree of uncertainty about the choice of options selected.
1	Major gaps in assessment covering regulated and any unregulated river systems in the region.	<ul style="list-style-type: none"> Major degree of uncertainty about the choice of options selected OR Evidence indicates, but does not clearly demonstrate that the best option has not been selected.
0	No assessment.	A better option clearly exists.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Options assessment in relation to regulated and unregulated rivers in the region. Environmental and social impact assessment of options. Assessment of cumulative and threshold impacts of options.
	Definitions	<p>Threshold impacts: Actions that cause a large step change to environmental or social conditions.</p> <p>Cumulative impacts: The sum total of impacts resulting from a series of changes to environmental or social conditions.</p>

B15 Aspect: Construction and associated infrastructure impacts.

An environmental and social management plan is, or will be in place for the construction stage of the project. The plan(s) cover impacts associated with infrastructure, such as roads, housing, and transmission lines. The plan(s) should thoroughly address all major issues involving environmental disturbance and changes to the affected communities. Emergency preparedness should also be included.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> Strong regulatory support for any actual or planned avoidance, mitigation, and/or enhancement strategies. Very high likelihood of success of planned construction avoidance, mitigation, and/or enhancement strategies. 	<ul style="list-style-type: none"> Suitable and adequate plans or likelihood of suitable and adequate plans. Comprehensive assessment or likelihood of comprehensive assessment.
4	<ul style="list-style-type: none"> Good regulatory support for any actual or planned construction avoidance, mitigation, and/or enhancement strategies. High likelihood of success of planned construction avoidance, mitigation, and/or enhancement strategies. 	<ul style="list-style-type: none"> Good plans or likelihood of good plans. Good assessment or likelihood of good assessment.
3	<ul style="list-style-type: none"> No significant regulatory opposition to any actual or planned construction avoidance, mitigation, and/or enhancement strategies. Likelihood of success of most planned construction avoidance, mitigation, and/or enhancement strategies. 	<ul style="list-style-type: none"> Adequate plans or likelihood of adequate plans. Adequate assessment or likelihood of adequate assessment.
2	<ul style="list-style-type: none"> Significant regulatory opposition for any actual or planned construction avoidance, mitigation, and/or enhancement strategies. Degree of uncertainty in relation to the success of planned construction avoidance, mitigation, and/or enhancement strategies. 	<ul style="list-style-type: none"> Less than satisfactory plans or likelihood of less than satisfactory plans. Less than satisfactory assessment or likelihood of less than satisfactory assessment.
1	<ul style="list-style-type: none"> Very little support OR high level of regulatory opposition for any actual or planned construction avoidance, mitigation, and/or enhancement strategies. High degree of uncertainty in relation to the success of planned construction avoidance, mitigation, and/or enhancement strategies. 	<ul style="list-style-type: none"> Poor plans or likelihood of poor plans. Poor assessment or likelihood of poor assessment.
0	<ul style="list-style-type: none"> No regulatory support, OR major opposition for any actual or planned construction avoidance, mitigation, and/or enhancement strategies. High probability of failure of any planned construction avoidance, mitigation, and/or enhancement strategies. 	<ul style="list-style-type: none"> No plans or likelihood of no plans. No assessment or likelihood of no assessment.
<p>Comments (attach additional pages if more space is required)</p>		
<p>Auditing Guidance Notes</p>	<p>Examples of Evidence</p> <ol style="list-style-type: none"> Construction management plan. Emergency response program or plans. Land rehabilitation and restoration plans. Chemical management plans. Protocols and agreements with local community. Protocols and agreements regarding construction workforce. Social and environmental plans relating to associated infrastructure, e.g., roads. 	

B16 Aspect: Land management and rehabilitation.

Measures the assessment and planning for effective land management and rehabilitation during the construction process. Also looks at agreements and planning for on-going land or catchment management, including management of terrestrial habitat, over the life of the scheme.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Best practice land or catchment management agreements, or likelihood of such agreements, where these are required to ensure sustainable land management and terrestrial habitat outcomes.	<ul style="list-style-type: none"> • Suitable and adequate plans or likelihood of suitable and adequate plans. • Comprehensive assessment or likelihood of comprehensive assessment
4	Very low level of uncertainty in relation to suitability and appropriateness of actual or planned land or catchment management agreements	<ul style="list-style-type: none"> • Good plans or likelihood of good plans. • Good assessment or likelihood of good assessment.
3	Minor uncertainty in relation to suitability and appropriateness of actual or planned land or catchment management agreements.	<ul style="list-style-type: none"> • Adequate plans or likelihood of adequate plans. • Adequate assessment or likelihood of adequate assessment.
2	Significant degree of uncertainty in relation to suitability and appropriateness of actual or planned land or catchment management agreements.	<ul style="list-style-type: none"> • Less than satisfactory plans or likelihood of less than satisfactory plans. • Less than satisfactory assessment or likelihood of less than satisfactory assessment.
1	Major degree of uncertainty in relation to suitability and appropriateness of actual or planned land or catchment management agreements.	<ul style="list-style-type: none"> • Poor plans or likelihood of poor plans. • Poor assessment or likelihood of poor assessment.
0	No actual or planned land or catchment management agreements.	<ul style="list-style-type: none"> • No plans or likelihood of no plans. • No assessment or likelihood of no assessment.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Design plans for land restoration and rehabilitation. 2. Construction management plans. 3. Revegetation program or planning. 4. Weed control program. 5. Site sediment controls or planning. 6. Catchment management agreements or planning. 7. Land use agreements or planning. 8. Vegetation retention or protection programs, e.g., riparian vegetation. 9. High-value terrestrial habitat retention or protection programs.

B17 Aspect: Biodiversity and Pest Species.

Looks at ecosystem values, habitat, and specific issues such as threatened species, fish passage, and introduced pest species in the catchment, reservoir, and downstream areas. Assesses planned investigations and likelihood of agreement with regulators and stakeholders.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Planning
5	<ul style="list-style-type: none"> Likelihood of comprehensive agreement with regulators and other stakeholders on ecosystem values. 	Adequate and suitable plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
4	<ul style="list-style-type: none"> Likely agreement with regulators and other stakeholders covering nearly all issues. 	Very few gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
3	<ul style="list-style-type: none"> Likely agreement with regulators and other stakeholders on most issues (including all critical issues). 	Minor gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
2	<ul style="list-style-type: none"> Agreement with regulators and other stakeholders likely to contain significant gaps. 	Significant gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
1	<ul style="list-style-type: none"> Agreement with regulators and other stakeholders likely to contain major gaps. 	Major gaps in plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
0	<ul style="list-style-type: none"> Agreement with regulators and other stakeholders unlikely. 	No plans for understanding of relevant catchment, in-reservoir, and downstream biodiversity issues.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Research and database on threatened species. Documented agreements in relation to ecosystem values. Research on fish passage and pest barriers. Plans for physical infrastructure, e.g. fish lifts. Biological monitoring plans. Interviews with regulators. Independent assessment by appropriately qualified individuals or groups.

B18 Aspect: Environmental flows and reservoir management.

Measures the likely effectiveness of the planned environmental flow and reservoir management regimes to meet expected environmental, social, and economic outcomes.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Very strong likelihood of community and regulator support (or no significant opposition).	<ul style="list-style-type: none"> • Adequate and suitable plans to research and define environmental (including biodiversity), social, and economic objectives. • Comprehensive process or planning for identifying stakeholder concerns.
4	Strong likelihood of community and regulator support (or no significant opposition).	<ul style="list-style-type: none"> • Very few gaps in the plans to research and define environmental (including biodiversity), social, and economic objectives. • Good process or planning for identifying stakeholder concerns.
3	Likelihood of general community and regulator support (or minor opposition).	<ul style="list-style-type: none"> • Minor gaps in the plans to research and define environmental (including biodiversity), social, and economic objectives. • Satisfactory process or planning for identifying stakeholder concerns.
2	Likelihood of only partial community and regulator support (or moderate levels of opposition).	<ul style="list-style-type: none"> • Less than satisfactory level planning to research and define environmental (including biodiversity), social, and economic objectives. • Less than satisfactory process or planning for identifying stakeholder concerns.
1	Likelihood of limited community and regulator support (or significant opposition).	<ul style="list-style-type: none"> • Major gaps in the plans to research and define environmental (including biodiversity), social, and economic objectives. • Weak process or planning for identifying stakeholder concerns.
0	Likelihood of no community and regulator support or major opposition.	No plans to research and define environmental (including biodiversity), social, and economic objectives.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Regulatory agreements. 2. Documented environmental, social, and economic objectives. 3. Surveys or other measures of stakeholder opinion. 4. Investigations and scientific reports. 5. Monitoring plans. 6. Interviews with stakeholders and regulators.

B19 Aspect: Sedimentation and erosion

Understanding the risks associated with reservoir and downstream sedimentation and erosion. Measures the likely effectiveness of programs to manage these risks. These programs could include, for example, specific operational rules, capital works, and catchment management programs.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> Comprehensive understanding of likely reservoir and downstream sedimentation and erosion issues and risks, or suitable and adequate plans to gain that understanding. Likelihood of maximum, practicable, participation in catchment management planning and implementation. Strong likelihood that the scheme will meet or exceed regulatory requirements and stakeholder expectations. 	Strong likelihood that best practice sedimentation and erosion management strategies will be in place during construction and operation of the scheme.
4	<ul style="list-style-type: none"> Good understanding of likely reservoir and downstream sedimentation and erosion issues and risks, or suitable and adequate plans to gain that understanding. Likelihood of high level, practicable, participation in catchment management planning and implementation. Likelihood that the scheme will meet regulatory requirements and stakeholder expectations. 	Likelihood that good sedimentation and erosion management strategies will be in place during construction and operation of the scheme.
3	<ul style="list-style-type: none"> Satisfactory understanding of likely reservoir and downstream sedimentation and erosion issues and risks, or suitable and adequate plans to gain that understanding. Likelihood of adequate level, practicable, participation in catchment management planning and implementation. Likelihood that the scheme will largely meet regulatory requirements and stakeholder expectations. 	Likelihood that satisfactory sedimentation and erosion management strategies will be in place during construction and operation of the scheme.
2	<ul style="list-style-type: none"> Gaps (actual or probable) in understanding of likely reservoir and downstream sedimentation and erosion issues and risks. Likelihood of low level, practicable, participation in catchment management planning and implementation. Likelihood that the scheme will fail to meet some regulatory requirements and face a moderate degree of ongoing stakeholder opposition. 	Likelihood of gaps in sedimentation and erosion management strategies during construction and operation of the scheme.
1	<ul style="list-style-type: none"> Major gaps (actual or probable) in understanding of likely reservoir and downstream sedimentation and erosion issues and risks. Likelihood of very limited, practicable, participation in catchment management planning and implementation. Likelihood that the scheme will fail to meet most regulatory requirements and face a significant degree of ongoing stakeholder opposition. 	Likelihood of major gaps in sedimentation and erosion management strategies during construction and operation of the scheme.
0	<ul style="list-style-type: none"> No understanding of likely reservoir and downstream sedimentation and erosion issues and risks. Likelihood of no practicable participation in catchment management planning and implementation. Likelihood that the scheme will not meet regulatory requirements and face major ongoing stakeholder opposition. 	Likelihood of no sedimentation and erosion management strategies during construction and operation of the scheme.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	
		<ol style="list-style-type: none"> Sedimentation and erosion risk management planning. Investigations into sedimentation and erosion issues in the reservoir and downstream. Stakeholder surveys and agreements. Regulatory license requirements. Interviews with stakeholders and regulators.

B20 Aspect: Water quality.

Planning to manage potential water quality issues in the reservoir and downstream of the power station.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> Comprehensive understanding of likely water quality issues or suitable and adequate plans to gain that understanding. Strong likelihood that scheme operations will either enhance or not cause deterioration to reservoir or downstream water quality. Likelihood of very strong operator influence, where practicable, on the behaviour of other water users to protect water quality. Strong likelihood that the scheme will meet or exceed regulatory requirements in the area of water quality. 	Planning for comprehensive water quality management program during construction and operation, by either the scheme owner or other organisation, e.g., government body.
4	<ul style="list-style-type: none"> Good understanding of likely water quality issues or suitable and adequate plans to gain that understanding. Likelihood that scheme operations will not cause deterioration to reservoir or downstream water quality. Likelihood of significant practicable operator influence on the behaviour of other water users to protect water quality. Likelihood that the scheme will meet regulatory requirements in the area of water quality. 	Planning for good water quality management program during construction and operation, by either the scheme owner or other organisation, e.g., government body.
3	<ul style="list-style-type: none"> Satisfactory understanding of likely water quality issues or suitable and adequate plans to gain that understanding. Likelihood that scheme operations will cause only minor water quality deterioration to reservoir or downstream water quality during early operational phases. Likelihood of some practicable operator influence on the behaviour of other water users to protect water quality. Likelihood that the scheme will largely meet regulatory requirements in the area of water quality. 	Planning for satisfactory water quality management program during construction and operation, by either the scheme owner or other organisation, e.g., government body.
2	<ul style="list-style-type: none"> Gaps (actual or probable) in understanding of likely water quality issues. Likelihood that scheme operations will cause ongoing water quality deterioration to reservoir or downstream water quality. Likelihood that the scheme will fail to meet some regulatory requirements in the area of water quality. 	Weaknesses in planning for water quality management program during construction and operation, by either the scheme owner or other organisation, e.g., government body.
1	<ul style="list-style-type: none"> Major gaps (actual or probable) in understanding of likely water quality issues. Likelihood that scheme operations will cause significant ongoing water quality deterioration to reservoir or downstream water quality. Likelihood that the scheme will fail to meet many regulatory requirements in the area of water quality. 	Major weaknesses in planning for water quality management program during construction and operation, by either the scheme owner or other organisation, e.g., government body.
0	<ul style="list-style-type: none"> No understanding of likely water quality issues. Likelihood that scheme operations will cause major water quality deterioration to reservoir or downstream water quality. Likelihood that the scheme will not meet regulatory requirements in the area of water quality. 	No planning for water quality management program during construction and operation, by either the scheme owner or other organisation, e.g., government body.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	
	<ol style="list-style-type: none"> Water quality management planning. Water license and water quality commitments. Water quality investigations. Records of negotiations with other water users. Water quality management agreements with other users. Interviews with regulators. 	

IHA Sustainability Assessment Protocol - Section C - Assessing Operating Hydropower Facilities

This sustainability assessment uses a scoring system from 5 to 0 for twenty fundamental aspects of economic, social, and environmental sustainability pertaining to operating hydropower facilities. These aspects have been drawn from the IHA's *Sustainability Guidelines*.

A score of 3 is considered satisfactory and essentially meets the requirements of the *Sustainability Guidelines*. Lower scores indicate significant gaps and/or poor sustainability performance.

A score of 4 indicates high standard performance, occasionally exceeding the requirements of the *Sustainability Guidelines*, with only very minor gaps.

A score of 5 exceeds the requirements of the *Sustainability Guidelines* and is at, or very near, international best practice as applied to the actual / local situation.

The document is designed to look at individual facilities, but for some circumstances, it may be necessary to use groups of facilities.

The table below explains the general intent of ratings from 5 through to 0.

Scoring for each Sustainability Assessment Aspect

Score	Performance	Description
5	Outstanding / Strong / Comprehensive	<ul style="list-style-type: none"> • At or very near international best practice. • Suitable, adequate, and effective planning and management systems. • Meets or exceeds objectives and measurable targets.
4	Good to Very Good	<ul style="list-style-type: none"> • High standard performance. • Generally suitable, adequate, and effective (minor gaps only) planning and management systems. • Meets most objectives and measurable targets including all critical ones.
3	Satisfactory	<ul style="list-style-type: none"> • Essentially meets the requirements of the <i>Sustainability Guidelines</i> (no major gaps). • Generally compliant with regulations and commitments (minor exceptions only). • Some non-critical gaps in planning and management systems. • Some non-critical gaps in meeting objectives and measurable targets.
2	Less than satisfactory	<ul style="list-style-type: none"> • Gaps in meeting the requirements of the <i>Sustainability Guidelines</i> • Some gaps in compliance with regulations and commitments. • Gaps in planning and management systems. • Gaps in meeting objectives and measurable targets.
1	Poor / Very Limited	<ul style="list-style-type: none"> • Poor performance. • Major gaps in compliance with regulations and commitments. • Major gaps in planning and management systems. • Major gaps in meeting objectives and measurable targets.
0	Very Poor	<ul style="list-style-type: none"> • No evidence of meeting the requirements of the <i>Sustainability Guidelines</i>. • Very poor performance or failure to address fundamental issues. • Little or no compliance with regulations and commitments. • Ineffective or absent planning or management systems. • Fails to meet objectives and measurable targets.

Assessment Details

Scheme(s)	
Location details	
Date of assessment	
Name and position / organisation of person(s) carrying out assessment	
Details of persons / organisations consulted during assessment	
Signature of authorising officer	

Summary of Aspects and Scores (Operating Hydropower Facilities)

No.	Aspect	Score	No.	Aspect	Score
C1	Governance		C11	Suppliers and service providers	
C2	Economic viability		C12	Cultural heritage	
C3	Additional economic benefits		C13	Social commitments	
C4	Markets, innovation, and research		C14	Directly affected stakeholders (including the local community)	
C5	Operational efficiency		C15	Environmental commitments and management	
C6	Operational short-term and long-term reliability		C16	Reservoir management	
C7	Community acceptance		C17	Environmental flows	
C8	Dam, power station, and associated infrastructure safety		C18	Biodiversity and pest species	
C9	Employee safety, occupational health, and well-being		C19	Water quality	
C10	Employee opportunity, equity, and diversity		C20	Sedimentation and erosion	

C1 Aspect: Governance.

Looks at the governance of the business in terms of sustainability objectives.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Business Principles (Performance)	Systems, Structure, and Reporting (Process)											
5	<ul style="list-style-type: none"> Clearly defined vision, values, ethical standards, strategies, and business principles that have strongly embedded and comprehensive sustainability objectives. Meets and often exceeds regulatory requirements and other commitments, including relevant international obligations. 	<ul style="list-style-type: none"> Comprehensive, independently certified management systems, including a commitment to continual improvement. An efficient and effective business structure. Transparent performance reporting process. 											
4	<ul style="list-style-type: none"> Significant incorporation of sustainability objectives in values, ethical standards, strategies, and business principles. Meets and occasionally exceeds regulatory requirements and other commitments, including relevant international obligations. 	<ul style="list-style-type: none"> Good management systems, not necessarily independently certified, including a commitment to continual improvement. A largely efficient and effective business structure. A largely effective performance reporting process. 											
3	<ul style="list-style-type: none"> Adequate levels of incorporation of sustainability objectives in values, ethical standards, strategies, and business principles. Generally meets regulatory requirements, including relevant international obligations. 	Management systems, business structure, and performance reporting process functioning, but with some gaps or weaknesses in non-critical areas.											
2	<ul style="list-style-type: none"> Less than satisfactory levels of incorporation of sustainability objectives in values, ethical standards, strategies, and business principles. Sometimes fails to meet regulatory requirements, including relevant international obligations. 	Large gaps in management systems, and problems with the effectiveness of the business structure and the performance reporting process.											
1	<ul style="list-style-type: none"> Limited levels of incorporation of sustainability objectives in values, ethical standards, strategies, and business principles. Often fails to meet regulatory requirements, including relevant international obligations. 	Major gaps in management systems, and serious problems with the effectiveness of the business structure and the performance reporting process.											
0	<ul style="list-style-type: none"> No recognition of sustainability objectives in the business. Continually fails to meet regulatory requirements, including relevant international obligations. 	No systematic approach to management OR dysfunctional business structure OR no performance reporting process.											
Comments (attach additional pages if more space is required)													
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Documentation of vision, values, strategy, or business principles. Sustainability policy or policies on economic, social, and environmental performance. Codes of conduct. Stakeholder / shareholder feedback. Awards and independent testimony (e.g., information on <i>Sustainable Hydropower</i> website). Management systems audits and certifications. Sustainability performance reporting (internal and external). Independent assessment of business structure effectiveness. 											
	Definitions	<p>Governance deals with the processes and systems by which an organization operates. These processes and systems are meant to ensure proper accountability and openness in the conduct of an organization's business.</p> <p>Ethics: the set of moral values and rules by which an organization operates.</p> <p>Sustainability involves activity that does not compromise the ability of future generations to meet their own needs. Sustainable activity should improve the quality of life without doing harm. Sustainability objectives should encompass economic, environmental, and social performance.</p> <table border="0"> <tr> <td>Economic</td> <td>Environmental</td> <td>Social</td> </tr> <tr> <td>growth</td> <td>ecosystem integrity</td> <td>empowerment and equity</td> </tr> <tr> <td>shareholder value</td> <td>climate integrity</td> <td>cultural identity</td> </tr> <tr> <td>efficiency and innovation</td> <td>biodiversity</td> <td>institutional development</td> </tr> </table>	Economic	Environmental	Social	growth	ecosystem integrity	empowerment and equity	shareholder value	climate integrity	cultural identity	efficiency and innovation	biodiversity
Economic	Environmental	Social											
growth	ecosystem integrity	empowerment and equity											
shareholder value	climate integrity	cultural identity											
efficiency and innovation	biodiversity	institutional development											

C2 Aspect: Economic viability.

Operations are economically viable. A business plan is in place, and auditing / monitoring measures performance against agreed benchmarks and targets.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> Strong economic performance. Satisfies shareholder expectations. Meets or exceeds agreed benchmarks and targets. 	Comprehensive business planning, including auditing, monitoring, and performance reporting.
4	<ul style="list-style-type: none"> Good economic performance. Satisfies shareholder expectations. Meets and occasionally exceeds agreed benchmarks and targets. 	Good business planning, including auditing, monitoring, and performance reporting.
3	<ul style="list-style-type: none"> Adequate economic performance. Mostly satisfies shareholder expectations. Generally meets agreed benchmarks and targets. 	Adequate business planning, including auditing, monitoring, and performance reporting OR good business planning with weaknesses in some elements.
2	<ul style="list-style-type: none"> Less than satisfactory economic performance. Moderate level of shareholder dissatisfaction. Fails to meet some agreed benchmarks and targets. 	Weakness in overall business planning or gaps in some elements.
1	<ul style="list-style-type: none"> Poor economic performance. Significant level of shareholder dissatisfaction. Fails to meet most agreed benchmarks and targets. 	Poor business planning with some significant elements missing.
0	<ul style="list-style-type: none"> Very poor economic performance. Lack of shareholder confidence in management. Fails to meet any agreed benchmarks and targets. 	Major weaknesses or gaps in business planning.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Business plan. Business charter. Other documentation detailing agreed benchmarks and targets. Annual reports and balance sheet. Shareholder feedback. Audit reports. Independent assessment of economic performance. Credit rating.
	Definitions	Agreed benchmarks and targets: These can vary from business to business and may be documented in a business charter or outlined in business plans and annual reports. The agreement is essentially with the shareholders, who may be governments or private investors.

C3 Aspect: Additional economic benefits.

Distribution of additional benefits to directly affected stakeholders and the broader community. These benefits can include:

- a) direct and indirect employment;
- b) education, transfer of knowledge, and capacity building;
- c) improved health care (new facilities, improved water supplies, provision of electricity);
- d) national development and additional economic activities, e.g., new industries;
- e) additional amenities, e.g., recreation and infrastructure (roads, electricity supply).

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Assessment Process
5	Opportunity for additional benefits has been maximised (quantum, types, and distribution).	Thorough assessment / understanding of effectiveness of additional benefits.
4	Opportunity for additional benefits has been significantly taken (quantum, types, and distribution).	Good assessment / understanding of effectiveness of additional benefits.
3	Opportunity for additional benefits not fully taken, but good level of additional benefits (quantum, types, and distribution).	Some assessment / understanding of effectiveness of additional benefits.
2	Moderate gap between opportunity and actual, but some additional benefits.	Limited assessment / understanding of effectiveness of additional benefits.
1	Substantial gap between opportunity and actual, with limited additional benefits.	Very limited assessment / understanding of effectiveness of additional benefits.
0	No opportunities taken.	No assessment of additional benefits.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Types and range of additional benefits. 2. Independent assessment of performance. 3. Identification of stakeholders. 4. Surveys of stakeholder support. 5. Interviews and discussions with stakeholders. 6. Assessment of opportunity. 7. Plans to measure effectiveness of additional benefits.
	Definitions	<p>Effectiveness: delivering an intended, expected, and/or desired effect (including an understanding of directly affected stakeholders, broader community, and opportunities)</p> <p>Directly Affected Stakeholders: are those communities within the immediate vicinity of the scheme, e.g., around the reservoir and downstream.</p> <p>Broader Community: essentially those in the area connected to or served by the scheme itself.</p> <p>Opportunity: the feasibility and practicability of delivering additional benefits. Consideration should be given to issues such as the nature of the local community, existing infrastructure, economic constraints, and political environment.</p>

C4 Aspect: Markets and innovation

Understanding of short and long-term market conditions, and ability to respond to potential changes in market conditions.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> • Thorough understanding of present and likely future market conditions. • Very high confidence in ability to respond to medium and long-term market variability. • Frequent identification and application of new solutions to improve performance. • Where required, introduction of new initiatives in response to market demands. 	Comprehensive assessment of market conditions and influences.
4	<ul style="list-style-type: none"> • Good understanding of present and likely future market conditions. • High confidence in ability to respond to medium and long-term market variability. • Some identification and application of new solutions to improve performance. • Where required, only rare examples where new initiatives have not been introduced to respond to market demands. 	Good assessment of market conditions and influences.
3	<ul style="list-style-type: none"> • Moderate understanding of present and likely future market conditions. • Some minor uncertainty in ability to respond to medium and long-term market variability. • Occasional identification and application of new solutions to improve performance. • Where required, a few examples where new initiatives have not been introduced to respond to market demands. 	Moderate assessment of market conditions and influences, with minor gaps only.
2	<ul style="list-style-type: none"> • Moderate understanding of present and likely future market conditions. • Uncertainty in ability to respond to medium and long-term market variability. • Limited identification and application of new solutions to improve performance. • Where required, a number of examples where new initiatives have not been introduced to respond to market demands. 	Limited assessment of market conditions and influences.
1	<ul style="list-style-type: none"> • Moderate understanding of present and likely future market conditions. • Little confidence in ability to respond to medium and long-term market variability. • Very limited identification and application of new solutions to improve performance. • Where required, many examples where new initiatives have not been introduced to respond to market demands. 	Major gaps in assessment of market conditions and influences.
0	<ul style="list-style-type: none"> • No understanding of present and likely future market conditions. • No confidence in ability to respond to medium and long-term market variability. • No identification and application of new solutions to improve performance. • Where required, no introduction of new initiatives in response to market demands. 	No assessment of market conditions and influences.

Comments (attach additional pages if more space is required)	
Auditing Guidance Notes	Examples of Evidence
	<ol style="list-style-type: none"> 1. Market research. 2. Research and development program. 3. Evidence of application of new solutions. 4. Awards and external recognition for innovation and/or research and development program. 5. Examples of new products. 6. Examples of expansion into new markets. 7. Examples of response to market demands.

C5 Aspect: Operational efficiency.

Assesses the operational efficiency of an individual power station or group of power stations in the context of the broader system and relevant market arrangements. The assessment looks at three specific areas:

1. management of the hydrological resource;
2. efficiency of the power station assets (e.g., turbines); and
3. efficiency of the network assets.

Also assesses efficiency in present context and progress towards the practicable removal of constraints that prevent optimum efficiency.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Optimum practicable efficiency in management of the hydrological resource, the power station assets, and the network assets.	<ul style="list-style-type: none"> • Comprehensive assessment of power station and network asset efficiency and hydrological management systems. • Benchmarking against optimum standards of efficiency in all three areas. • Comprehensive analysis of hydrological resource.
4	<ul style="list-style-type: none"> • Operating to near maximum efficiency. • Identification of practicable constraints with some progress towards removing constraints. 	<ul style="list-style-type: none"> • Good assessment of power station and network asset efficiency and hydrological management systems (needs to be within the last two years). • Benchmarking against optimum standards of efficiency in all three areas. • Good analysis of hydrological resource.
3	<ul style="list-style-type: none"> • Operating to near maximum efficiency. • Identification of practicable constraints with little or no progress towards removing constraints. 	<ul style="list-style-type: none"> • Assessment of power station and network asset efficiency and hydrological management systems (not necessarily comprehensive or recent). • Some benchmarking against optimum standards of efficiency in all three areas. • Good analysis of hydrological resource.
2	<ul style="list-style-type: none"> • Gaps in the efficiency of operations with some progress towards closing those gaps. • Limited progress in either identifying or addressing constraints that prevent optimal performance. 	<ul style="list-style-type: none"> • Occasional assessment of asset efficiency and hydrological management systems. • Limited or no benchmarking against optimum standards of efficiency in all three areas. • Moderate analysis of hydrological resource.
1	<ul style="list-style-type: none"> • Significant gaps in efficiency of operations with limited progress towards closing those gaps. • Little progress in either identifying or addressing constraints that prevent optimal performance. 	<ul style="list-style-type: none"> • Limited assessment of asset efficiency and hydrological management systems. • Limited or no benchmarking against optimum standards of efficiency in all three areas. • Limited analysis of hydrological resource.
0	Significantly inefficient operations in all three areas OR no assessment of operational efficiencies issues.	Absence or major weaknesses in assessments and analysis.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Periodic reviews. 2. Independent assessment of hydrological management system. 3. Program of asset upgrades. 4. Information on system efficiency. 5. Information on comparative equipment and system performance. 6. Information on practicability of constraint removal. 7. Information on the operational efficiency of individual power station, or groups of power stations, in the context of the broader system and relevant market arrangements. 8. Operational efficiency identification, measurement, and assessment process. 9. Hydrological monitoring and analysis program. 10. Energy production management system.
	Definitions	<p>Optimal: at or very near maximum efficiency following the practicable removal of any constraints.</p> <p>Constraints: various limits on the efficiency of operations, e.g., inefficient or undersized transmission lines, inefficient or poorly functioning transformers, inefficient turbines, water management constraints.</p>

C6 Aspect: Operational short-term and long-term reliability.

Assesses the operational reliability of an individual power station or group of power stations in the context of the broader system.

This includes short-term and long-term reliability of the hydrological resource, power station assets (e.g., turbines and generators), and network assets.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	Outstanding reliability performance, and a high level of confidence in future reliability of the assets and hydrological resource on both a short-term and long-term basis.	<ul style="list-style-type: none"> Comprehensive asset and hydrological resource management strategies / systems. Comprehensive emergency preparedness program for events such as severe droughts and equipment failure. High standard analysis of future reliability of hydrological resource.
4	Good reliability performance and only minor uncertainties in relation this continuing into the future	<ul style="list-style-type: none"> More than satisfactory asset and hydrological resource management strategies / systems. Good emergency preparedness program. Some analysis of future reliability of hydrological resource.
3	Satisfactory reliability performance and some uncertainties in relation to this continuing or being improved into the future.	<ul style="list-style-type: none"> Asset and hydrological resource management strategies / systems with some gaps. Emergency preparedness program with some gaps. Limited analysis of future reliability of hydrological resource.
2	Less than satisfactory reliability performance and some uncertainties in relation to this continuing or being improved in the future.	<ul style="list-style-type: none"> Asset and hydrological resource management strategies / systems with significant gaps. Emergency preparedness program with significant gaps. Limited or no analysis of future reliability of hydrological resource.
1	Less than satisfactory reliability performance and likelihood that this would continue or worsen in the future.	<ul style="list-style-type: none"> Poor asset and hydrological resource management strategies / systems. Poor emergency preparedness program. Limited or no analysis of future reliability of hydrological resource.
0	Near worst practice for reliability performance and likelihood that this would continue in the future.	<ul style="list-style-type: none"> Absence of asset and hydrological resource management strategies / systems and/or emergency preparedness program. No analysis of future reliability of hydrological resource.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	
	<ol style="list-style-type: none"> Record of asset performance. (Note: reliability of dam structure addressed in C8.) Power station asset management strategies and programs. Asset performance guarantees. Emergency / unusual event plans. Analysis of long-term hydrological records. Research into future hydrological reliability. Contingencies to cope with future changes to hydrological reliability. Asset reliability assessment and monitoring program. Hydrological assessment and monitoring program. Research program into future hydrological reliability. Emergency preparedness exercises. 	

C7 Aspect: Community acceptance.

Assesses the ongoing degree of community support for the scheme and the processes used to maintain that support.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Degree of community acceptance (Performance)	Stakeholder consultation process
5	Strong community support OR no significant community opposition.	Comprehensive stakeholder consultation process.
4	Good level of community support OR minor community opposition.	Good stakeholder consultation process with very few gaps in suitability, adequacy, or effectiveness.
3	Reasonable level of community support OR some community opposition.	Adequate stakeholder consultation process with some gaps in suitability, adequacy, or effectiveness.
2	Limited community support OR moderate level of community opposition.	Significant gaps in consultation process suitability, adequacy, or effectiveness.
1	Low level of community support OR high level of community opposition that is not broad-based.	Weak consultation process program, largely unsuitable, inadequate, or ineffective.
0	High level of broad-based community opposition.	No stakeholder consultation process.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Written agreements with stakeholders. 2. Records of interviews. 3. Results of surveys or polls. 4. Minutes of meetings with stakeholder groups. 5. Various process documentation. 6. Stakeholder and issue identification. 7. Determining objectives and targets. 8. Methodologies used, including consultation strategies, resources, timings, information sharing. 9. Stakeholder input and feedback. 10. Monitoring and measurement for suitability, adequacy, and effectiveness. 11. Public reports and website information.

C8 Aspect: Dam, power station, and associated infrastructure safety.

Asset safety is demonstrated as a first priority for dam and power stations.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Asset Safety Performance	Asset Safety Process
5	Outstanding dam, power station, and associated infrastructure safety performance.	Comprehensive dam, power station, and associated infrastructure safety program and plan consistent with relevant international and/or national standards.
4	Good dam, power station, and associated infrastructure safety performance.	Good dam, power station, and associated infrastructure safety program with very few gaps, and plan does not quite meet relevant international and/or national standards.
3	Satisfactory dam, power station, and associated infrastructure safety performance.	Adequate dam, power station, and associated infrastructure safety program with some gaps.
2	Less than satisfactory dam, power station, and associated infrastructure safety performance.	Significant gaps in dam, power station, and associated infrastructure safety program.
1	Poor dam, power station, and associated infrastructure safety performance.	Weak dam, power station, and associated infrastructure safety program, largely unsuitable, inadequate, or ineffective.
0	Very poor dam, power station, and associated infrastructure safety performance.	Absence of dam, power station, and associated infrastructure safety program.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Safety and legal compliance records. 2. Inspection program and inspection records. 3. Independent verifications. 4. Incident investigations and corrective action records. 5. Improvements made to physical items or processes. 6. Issue identification and risk assessment (including seismic risk). 7. Determining objectives and targets, safety planning. 8. Incorporation of standards and other requirements in plans. 9. Resources and training / competencies. 10. Emergency preparedness. 11. Comprehensive agreements with emergency authorities. 12. Monitoring and measurement for suitability, adequacy, and effectiveness.

C9 Aspect: Employee safety, occupational health, and well-being.

A comprehensive employee safety, occupational health, and well-being program is in place and its effectiveness can be demonstrated. This system identifies and measures the status of employee safety, occupational health, and well-being issues and hazards. The system also details management measures to reduce or eliminate hazards and enhance occupational health and well-being.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Employee Safety, Occupational Health, and Well-Being Performance	Employee Safety, Occupational Health, and Well-Being Process
5	Outstanding employee safety, occupational health, and well-being performance.	Comprehensive safety, occupational health, and well-being employee program.
4	Good employee safety, occupational health, and well-being performance.	Good employee safety, occupational health, and well-being program with very few gaps.
3	Satisfactory employee safety, occupational health, and well-being performance.	Adequate employee safety, occupational health, and well-being program with some gaps.
2	Less than satisfactory employee safety, occupational health, and well-being performance.	Significant gaps in employee safety, occupational health, and well-being program.
1	Poor employee safety, occupational health, and well-being performance.	Weak employee safety, occupational health, and well-being program, largely unsuitable, inadequate, or ineffective.
0	Very poor employee safety, occupational health, and well-being performance.	Absence of employee safety, occupational health, and well-being program.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> 1. Occupational health and safety programs, e.g., well-being, medical examinations, noise assessments, ergonomics. 2. Occupational health and safety, and legal compliance records. 3. Independent testimony, awards. 4. Training / competency records and employee awareness. 5. Incident investigations and follow-ups. 6. Improvements made to physical items or processes. 7. Issue identification and risk assessment. 8. Determining objectives and targets, occupational health and safety planning. 9. Incorporation of standards and other requirements in plans. 10. Resources and employee involvement / communications. 11. Emergency preparedness. 12. Monitoring and measurement for suitability, adequacy, and effectiveness.

C10 Aspect: Employee opportunity, equity, and diversity.

Employee training, development, equity, and diversity programs are in place and viewed positively by the recipients.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Standard and acceptance of employee opportunity and equity program (Performance)	Program evaluation (Process)
5	<ul style="list-style-type: none"> Comprehensive employee opportunity, equity, and diversity programs, and significant training and development opportunities for employees. Largely positive employee feedback or minimal opposition to programs. 	Comprehensive employee feedback program.
4	<ul style="list-style-type: none"> Good employee opportunity, equity, and diversity programs, with minor weaknesses in either equity or training and development programs. Generally positive employee feedback or minor opposition to programs. 	Good employee feedback program.
3	<ul style="list-style-type: none"> Satisfactory employee opportunity, equity, and diversity programs, with some weaknesses in either equity or training and development programs. Moderate levels of employee opposition to programs 	Satisfactory employee feedback program with some gaps.
2	<ul style="list-style-type: none"> Less than satisfactory employee opportunity, equity, and diversity programs, with significant weaknesses in equity, diversity, or training and development programs. Significant levels of employee opposition to programs. 	Less than satisfactory employee feedback program with significant gaps.
1	<ul style="list-style-type: none"> Poor employee opportunity, equity, and diversity programs, with major weaknesses in equity, diversity, and/or training / development programs. Major levels of employee opposition to programs. 	Poor employee feedback program with major gaps.
0	<ul style="list-style-type: none"> No employee opportunity, equity, and diversity programs. Significant levels of employee dissatisfaction. 	No employee feedback program.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Employee feedback program. Staff satisfaction surveys. Training program and records. Policy on equity. Employee competency levels. Workforce and succession planning. Employee profile. Management profile.

C11 Aspect: Suppliers and service providers.

Measures the organisation's consideration of sustainability issues when purchasing goods and services. Also assesses the organisation's relationships with major suppliers and service providers (e.g., network service provider).

NOTE: Sustainability performance of a supplier or service provider should be assessed on the basis of the potential risk of associating with that business. For example, reputational risk or likelihood of non-compliance with sustainability objectives. Considerations should include things such as, environmental performance, the adoption of internationally recognised labour practices, human rights, and support for local employment.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Requirements and Relationships (Performance)	Analysis, Assessment, and Selection (Process)
5	<ul style="list-style-type: none"> Suppliers and service providers have comprehensive sustainability performance. Organisation has strong relationships with major suppliers and service providers. 	<ul style="list-style-type: none"> Comprehensive understanding of sustainability issues in purchasing goods and services. Comprehensive goods and service provider assessment and selection process.
4	<ul style="list-style-type: none"> Most suppliers and service providers have comprehensive to good sustainability performance. Organisation has generally good relationships with major suppliers and service providers. 	<ul style="list-style-type: none"> Good understanding of sustainability issues in purchasing goods and services. Good goods and service provider assessment and selection process.
3	<ul style="list-style-type: none"> Some variability in sustainability performance among suppliers and service providers. Organisation has good relationships with most major suppliers and service providers. 	<ul style="list-style-type: none"> Some gaps in understanding of sustainability issues in purchasing goods and services. Some gaps in goods and service provider assessment and selection process.
2	<ul style="list-style-type: none"> Variability and some poor sustainability performance among suppliers and service providers. Organisation has variable relationships with major suppliers and service providers. 	<ul style="list-style-type: none"> Significant gaps in understanding of sustainability issues in purchasing goods and services. Significant gaps in goods and service provider assessment and selection process.
1	<ul style="list-style-type: none"> Dominantly poor sustainability performance among suppliers and service providers. Organisation has poor relationships with most major suppliers and service providers. 	<ul style="list-style-type: none"> Major gaps in understanding of sustainability issues in purchasing goods and services. Major gaps in goods and service provider assessment and selection process.
0	<ul style="list-style-type: none"> Very poor sustainability performance across most suppliers and service providers. Organisation has poor relationships with nearly all major suppliers and service providers. 	<ul style="list-style-type: none"> No understanding of sustainability issues in purchasing goods and services OR No sustainability considerations in the goods and service provider assessment and selection process.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Supplier / service provider pre-qualification processes. Tender requirements / specifications. Evaluation of supplier performance. Purchasing policy and procedures. Tender evaluation. Procurement staff understanding of sustainability issues. Contracts and agreements with suppliers. Measurement and reporting of supply chain impacts.

C12 Aspect: Cultural heritage.

Looks at the protection and conservation of historic and indigenous heritage values.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Planning (Process)
5	<ul style="list-style-type: none"> Comprehensive understanding of values and issues. Nearly all protection and conservation requirements / targets met. Strong agreement on program with regulators and other stakeholders. 	<ul style="list-style-type: none"> Comprehensive plans, consistent with relevant legislation and international standards.
4	<ul style="list-style-type: none"> Good understanding of values and issues. Most protection and conservation requirements / targets met. Good agreement on program with regulators and other stakeholders. 	<ul style="list-style-type: none"> Good plans, generally consistent with relevant legislation and international standards.
3	<ul style="list-style-type: none"> Some gaps in understanding of values and issues or early phase of identifying values and issues. Early stage in meeting protection and conservation requirements / targets OR variable progress. Generally compliant with legislative obligations. Variable level of agreement on program with regulators and other stakeholders and/or some minor opposition. 	<ul style="list-style-type: none"> Plans, generally consistent with relevant legislation and international standards, with some gaps or in early phase of development.
2	<ul style="list-style-type: none"> Significant gaps in understanding of values and issues. Significant gaps in meeting protection and conservation requirements / targets. Some gaps in complying with legislative obligations. Low level of agreement on program with regulators and other stakeholders and/or significant opposition. 	<ul style="list-style-type: none"> Plans, with gaps in either coverage or consistency with relevant legislation and international standards.
1	<ul style="list-style-type: none"> Major gaps in understanding of values and issues. Major gaps in meeting protection and conservation requirements / targets. Significant gaps in complying with legislative obligations. Limited agreement on program with regulators and other stakeholders and/or major opposition. 	<ul style="list-style-type: none"> Plans, with significant gaps in either coverage or consistency with relevant legislation and international standards.
0	<ul style="list-style-type: none"> Limited understanding of values and issues. Major gaps in complying with legislative obligations. 	<ul style="list-style-type: none"> No plans in place.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Conservations plans. Heritage impact statements. Heritage plans and agreements. Interviews with regulators and other stakeholders. Physical inspection of sites or restoration projects.
	Definitions	<p>Cultural heritage: refers to monuments, buildings, groups of buildings, and sites with historical, aesthetic, archaeological, scientific, ethnological, or anthropological value.</p> <p>International standards: an example of a recognised standard for built heritage would be the ICOMOS Venice Charter 1965.</p>

C13 Aspect: Social commitments.		
Comprehensive social management program and performance in relation to original social commitments made when the scheme was approved AND to current social commitments.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Performance	Planning (Process)
5	<ul style="list-style-type: none"> Comprehensive identification of relevant social issues and incorporation into commitments. Comprehensive compliance with original and current social commitments. Meets or exceeds any regulatory requirements or stakeholder agreements. 	Comprehensive social management planning that is independently endorsed.
4	<ul style="list-style-type: none"> Good identification of relevant social issues and incorporation into commitments. Good compliance with original and current social commitments. Meets or exceeds any regulatory requirements or stakeholder agreements. 	Comprehensive social management planning that is not independently endorsed.
3	<ul style="list-style-type: none"> Adequate identification of relevant social issues and incorporation into commitments. Minor gaps in compliance with original and current social commitments. Minor gaps in meeting any regulatory requirements or stakeholder agreements. 	Minor gaps in social management planning.
2	<ul style="list-style-type: none"> Gaps in identification of relevant social issues and incorporation into commitments. Gaps in compliance with original and current social commitments. Minor gaps in meeting any regulatory requirements or stakeholder agreements. 	Gaps in social management planning.
1	<ul style="list-style-type: none"> Significant gaps in identification of relevant social issues and incorporation into commitments. Significant gaps in compliance with original and current social commitments. Significant gaps in meeting any regulatory requirements or stakeholder agreements. 	Significant gaps in social management planning.
0	<ul style="list-style-type: none"> Major gaps in identification of relevant social issues and/or no incorporation into commitments. Major gaps in compliance with original and current social commitments. Major gaps in meeting any regulatory requirements or stakeholder agreements. 	Absence of social management planning.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Original social impact assessment and social management plans. Current social management commitments and plans. Records on performance of original and current social commitments. Independent review of implementation of social management commitments. Independent audit of compensation programs.
	Definitions	<p>Original social commitments: Commitments made in a Social Impact Assessment, Social Management Plan, or Resettlement Plan when the scheme was approved. Commitments include both regulatory and voluntary.</p> <p>NOTE: Schemes built in a jurisdiction that, at the time, did not have formal social requirements are assessed on current social commitments.</p>

C14 Aspect: Directly affected stakeholders (including the local community).

Measures the success of avoidance, mitigation, compensation, and enhancement programs addressing social impacts on directly affected stakeholders (including vulnerable social groups). Also measures community support for those programs.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Planning (Process)
5	<ul style="list-style-type: none"> Directly affected stakeholders (including vulnerable social groups) have not been socially or culturally disadvantaged. Significant social and cultural enhancements have resulted from the project. No significant opposition, OR strong local community support for compensation and enhancement programs. 	<ul style="list-style-type: none"> Comprehensive analysis of the social and cultural effects on directly affected stakeholders (including vulnerable social groups). Comprehensive social and cultural compensation and/or enhancement programs. Comprehensive involvement of the local community and other directly affected stakeholders.
4	<ul style="list-style-type: none"> Directly affected stakeholders (including vulnerable social groups) have not been socially or culturally disadvantaged. Moderate social and cultural enhancements have resulted from the project. Minor opposition, OR good local community support for compensation and enhancement programs. 	<ul style="list-style-type: none"> Good analysis of the social and cultural effects on directly affected stakeholders (including vulnerable social groups). Good social and cultural compensation and/or enhancement programs. Significant involvement of the local community and other directly affected stakeholders.
3	<ul style="list-style-type: none"> Directly affected stakeholders (including vulnerable social groups) have not been socially or culturally disadvantaged when considering the net result of compensation and enhancement programs. Some opposition, OR reasonable level of local community support for compensation and enhancement programs. 	<ul style="list-style-type: none"> Minor gaps in the analysis of the social and cultural effects on directly affected stakeholders (including vulnerable social groups). Largely satisfactory social and cultural compensation and/or enhancement programs. Moderate involvement of the local community and other directly affected stakeholders.
2	<ul style="list-style-type: none"> Directly affected stakeholders (including vulnerable social groups) have experienced minor levels of social or cultural disadvantage when considering the net result of compensation and enhancement programs. Moderate level of opposition, OR limited local community support for compensation and enhancement programs. 	<ul style="list-style-type: none"> Gaps in the analysis of the social and cultural effects on directly affected stakeholders (including vulnerable social groups). Some gaps in the social and cultural compensation and/or enhancement programs. Limited involvement of the local community and other directly affected stakeholders.
1	<ul style="list-style-type: none"> Directly affected stakeholders (including vulnerable social groups) have experienced significant levels of social or cultural disadvantage when considering the net result of compensation and enhancement programs. High level of opposition, OR low level of local community support for compensation and enhancement programs. 	<ul style="list-style-type: none"> Major gaps in the analysis of the social and cultural effects on directly affected stakeholders (including vulnerable social groups). Major gaps in the social and cultural compensation and/or enhancement programs. Very limited involvement of the local community and other directly affected stakeholders.
0	<ul style="list-style-type: none"> Directly affected stakeholders (including vulnerable social groups) have experienced major levels of social or cultural disadvantage when considering the net result of compensation and enhancement programs. Very high level of opposition, OR no local community support for compensation and enhancement programs. 	<ul style="list-style-type: none"> No analysis of the social and cultural effects on directly affected stakeholders (including vulnerable social groups). No social and cultural compensation and/or enhancement programs. No involvement of the local community and other directly affected stakeholders.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	<ol style="list-style-type: none"> Resettlement plans and compensation program. Cultural enhancement programs for vulnerable social groups. Relevant public health program or commitments. Surveys, interviews with directly affected stakeholders. Independent audit of compensation programs. 	
Examples of Evidence		

C15 Aspect: Environmental commitments and management.		
Performance in relation to original environmental commitments made when the scheme was approved AND to current environmental commitments (including environmental management systems).		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Performance	Process
5	<ul style="list-style-type: none"> Comprehensive compliance with original and current environmental commitments. Exceeds regulatory requirements in several areas. 	<ul style="list-style-type: none"> Comprehensive environmental management system that is independently certified to a relevant international standard. Comprehensive auditing that demonstrates compliance with original and current environmental commitments.
4	<ul style="list-style-type: none"> Good compliance with original and current environmental commitments. Exceeds regulatory requirements in some areas. 	<ul style="list-style-type: none"> Comprehensive environmental management system (conforming to a relevant international standard) that is not independently certified. Comprehensive auditing that demonstrates compliance with original and current environmental commitments.
3	<ul style="list-style-type: none"> Largely complies with original and current environmental commitments. Essentially meets regulatory requirements. 	<ul style="list-style-type: none"> Good environmental management system (minor gaps only when measured against a relevant international standard). Evidence of essential compliance with original and current environmental commitments.
2	<ul style="list-style-type: none"> Gaps in compliance with original and current environmental commitments. Minor gaps in meeting regulatory requirements. 	<ul style="list-style-type: none"> Gaps in environmental management system. Evidence of only partial compliance with original and current environmental commitments.
1	<ul style="list-style-type: none"> Significant gaps in compliance with original and current environmental commitments. Significant gaps in meeting regulatory requirements. 	<ul style="list-style-type: none"> Significant gaps in environmental management system. Evidence of limited compliance with original and current environmental commitments.
0	<ul style="list-style-type: none"> Major gaps in compliance with original and current environmental commitments. Major gaps in meeting regulatory requirements. 	Absence of management system, and absence of evidence of compliance with original and current environmental commitments.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Audit records on closure of original and current EIA/EMP commitments. Compliance records. Incidents and prosecutions. Audit records on performance of environmental management system. Independent review of environmental management system. Environmental license conditions. Environmental management system elements, including environmental management plans. Present policy.
	Definitions	<p>Original environmental commitments: Commitments made in the EIA and EMP when the scheme was approved. Often spelled out in the environmental license conditions. Commitments include both regulatory and voluntary.</p> <p>NOTE: Schemes built in a jurisdiction that, at the time, did not have formal environment requirements are assessed on current environmental commitments.</p>

C16 Aspect: Reservoir management.

Measures the effectiveness of the reservoir management regime to meet agreed environmental, social, and economic outcomes.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> All environmental, social, and economic objectives for the reservoir management regime have been met or exceeded. Strong community and regulator support (or no significant opposition) for reservoir management regime. 	<ul style="list-style-type: none"> Thoroughly researched and defined environmental (including biodiversity), social, and economic objectives for reservoir management regime. Comprehensive process for identifying stakeholder concerns.
4	<ul style="list-style-type: none"> All environmental, social, and economic objectives for the reservoir management regime have been met or are on target to be met. Good community and regulator support (or very minor opposition) for reservoir management regime. 	<ul style="list-style-type: none"> Well researched with most environmental (including biodiversity), social, and economic objectives defined for reservoir management regime. Good process for identifying stakeholder concerns.
3	<ul style="list-style-type: none"> All major environmental, social, and economic objectives for the reservoir management regime have been met or are on target to be met. General community and regulator support (or minor opposition) for reservoir management regime. 	<ul style="list-style-type: none"> Minor gaps in research or program only partially completed. Objectives only partially defined with plans in place to complete. Satisfactory process for identifying stakeholder concerns.
2	<ul style="list-style-type: none"> Gaps in meeting environmental, social, and economic objectives for the reservoir management regime and/or gaps in the plans to meet objectives. Partial community and regulator support (or moderate levels of opposition) for reservoir management regime. 	<ul style="list-style-type: none"> Less than satisfactory level of research. Gaps in program or plans to complete. Less than satisfactory process for identifying stakeholder concerns.
1	<ul style="list-style-type: none"> Major gaps in meeting environmental, social, and economic objectives for the reservoir management regime and/or major gaps in the plans to meet objectives. Limited community and regulator support (or significant opposition) for reservoir management regime. 	<ul style="list-style-type: none"> Limited research with major gaps. Weak process for identifying stakeholder concerns.
0	<ul style="list-style-type: none"> No environmental, social, and economic objectives for the reservoir management regime have been met. No community and regulator support (or major opposition) for reservoir management regime. 	<ul style="list-style-type: none"> No research or absence of program or plans or no process to understand concerns.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	1. Regulatory agreements. 2. Documented environmental, social, and economic objectives. 3. Surveys or other measures of stakeholder opinion. 4. Documented research program. 5. Monitoring and review.

C17 Aspect: Environmental flows.		
Measures the effectiveness of the environmental flow regime to meet agreed environmental, social, and economic outcomes.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Performance	Process
5	<ul style="list-style-type: none"> All environmental, social, and economic objectives for the reservoir management regime have been met or exceeded. Strong community and regulator support (or no significant opposition) for environmental flow regime. 	<ul style="list-style-type: none"> Thoroughly researched and defined environmental (including biodiversity), social, and economic objectives for environmental flow regime. Comprehensive process for identifying stakeholder concerns.
4	<ul style="list-style-type: none"> All environmental, social, and economic objectives for the environmental flow regime have been met or are on target to be met. Good community and regulator support (or very minor opposition) for environmental flow regime. 	<ul style="list-style-type: none"> Well researched with most environmental (including biodiversity), social, and economic objectives defined for environmental flow regime. Good process for identifying stakeholder concerns.
3	<ul style="list-style-type: none"> All major environmental, social, and economic objectives for the environmental flow regime have been met or are on target to be met. General community and regulator support (or minor opposition) for environmental flow regime. 	<ul style="list-style-type: none"> Minor gaps in research or program only partially completed. Objectives only partially defined with plans in place to complete. Satisfactory process for identifying stakeholder concerns.
2	<ul style="list-style-type: none"> Gaps in meeting environmental, social, and economic objectives for the environmental flow regime and/or gaps in the plans to meet objectives. Partial community and regulator support (or moderate levels of opposition) for environmental flow regime. 	<ul style="list-style-type: none"> Less than satisfactory level of research. Gaps in program or plans to complete. Less than satisfactory process for identifying stakeholder concerns.
1	<ul style="list-style-type: none"> Major gaps in meeting environmental, social, and economic objectives for the environmental flow regime and/or major gaps in the plans to meet objectives. Limited community and regulator support (or significant opposition) for environmental flow regime. 	<ul style="list-style-type: none"> Limited research with major gaps. Weak process for identifying stakeholder concerns.
0	<ul style="list-style-type: none"> No environmental, social, and economic objectives for the environmental flow regime have been met. No community and regulator support (or major opposition) for environmental flow regime. 	<ul style="list-style-type: none"> No research or absence of program or plans or no process to understand concerns.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	<ol style="list-style-type: none"> Regulatory agreements. Documented environmental, social, and economic objectives. Surveys or other measures of stakeholder opinion. Documented research program. Monitoring and review. 	
Examples of Evidence		

C18 Aspect: Biodiversity and pest species.

Looks at agreed ecosystem values, habitat, and specific issues such as threatened species, fish passage, and pest species in the catchment, reservoir, and downstream areas.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Agreement and Performance	Knowledge and Planning
5	<ul style="list-style-type: none"> Achievement of all objectives and targets. Comprehensive agreement with regulators and other stakeholders on ecosystem values. 	<ul style="list-style-type: none"> Comprehensive understanding of relevant catchment, in-reservoir, and downstream biodiversity issues. Comprehensive program with clear objectives and targets in place.
4	<ul style="list-style-type: none"> Significant progress in meeting objectives and targets. Agreement with regulators and other stakeholders covering most issues with only minor gaps on ecosystem values. 	<ul style="list-style-type: none"> Good understanding of issues. Program with good coverage.
3	<ul style="list-style-type: none"> Early phase of progress towards meeting objectives and targets OR variable progress. Agreement with regulators and other stakeholders on some issues with progress towards closing gaps. 	<ul style="list-style-type: none"> Some gaps in understanding of issues. Program with satisfactory coverage.
2	<ul style="list-style-type: none"> Limited progress towards meeting objectives and targets. Agreement with regulators and other stakeholders on few issues. 	<ul style="list-style-type: none"> Significant gaps in understanding of issues. Program with significant gaps.
1	<ul style="list-style-type: none"> Little progress towards meeting objectives and targets. Limited agreement with regulators and other stakeholders. 	<ul style="list-style-type: none"> Major gaps in understanding of issues. Program with major gaps.
0	<ul style="list-style-type: none"> No progress towards meeting objectives and targets. No agreement with regulators and other stakeholders. 	<ul style="list-style-type: none"> Limited understanding of issues. No program.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	<ol style="list-style-type: none"> Research and databases on threatened species. Documented agreements in relation to ecosystem values. Research on fish passage and pest barriers. Physical infrastructure, e.g., fish lifts. Biological monitoring data.

C19 Aspect: Water quality.		
Management of water quality in the reservoir and downstream of the power station.		
Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.		
Score	Performance	Process
5	<ul style="list-style-type: none"> Comprehensive understanding of water quality issues. Scheme operations either enhance or do not cause deterioration to reservoir or downstream water quality. Strong operator influence, where practicable, on the behaviour of other water users to protect water quality. The scheme meets or exceeds regulatory requirements and commitments in the area of water quality. 	Comprehensive water quality management program, by either the scheme owner or other organisation, e.g., government organisation.
4	<ul style="list-style-type: none"> Good understanding of water quality issues. Scheme operations either enhance or do not cause deterioration to reservoir or downstream water quality. Some operator influence, where practicable, the behaviour or other water users to protect water quality. The scheme meets or occasionally exceeds regulatory requirements and commitments in the area of water quality. 	Good water quality management program, by either the scheme owner or other organisation, e.g., government organisation.
3	<ul style="list-style-type: none"> Adequate understanding of water quality issues. Scheme operations cause only occasional and minor deterioration to reservoir or downstream water quality. Limited operator influence, where practicable, the behaviour or other water users to protect water quality. The scheme essentially meets regulatory requirements in the area of water quality. 	Adequate water quality management program, by either the scheme owner or other organisation, e.g., government organisation.
2	<ul style="list-style-type: none"> Gaps in understanding of water quality issues. Scheme operations cause some occasional and moderate deterioration to reservoir or downstream water quality. The scheme sometimes fails to meet regulatory requirements in the area of water quality. 	Gaps in water quality management program, by either the scheme owner or other organisation, e.g., government organisation.
1	<ul style="list-style-type: none"> Poor understanding of water quality issues. Scheme operations cause ongoing deterioration to reservoir or downstream water quality. The scheme often fails to meet regulatory requirements in the area of water quality. 	Major gaps in water quality management program, by either the scheme owner or other organisation, e.g., government organisation.
0	<ul style="list-style-type: none"> Limited or no understanding of water quality issues. Scheme operations cause major ongoing deterioration to reservoir or downstream water quality. The scheme continuously fails to meet regulatory requirements in the area of water quality. 	Absence of water quality management program, by either the scheme owner or other organisation, e.g., government organisation.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	
	<ol style="list-style-type: none"> Water management program. Water management monitoring records. Water license and water quality commitments. Water quality investigations. Prosecutions. Records of negotiations or agreements with other water users. Water quality management agreements with other users. 	

C20 Aspect: Sedimentation and erosion.

Understanding the risks associated with reservoir and downstream sedimentation and erosion. Measures the effectiveness of programs to manage these risks. These programs could include, for example, specific operational rules, capital works, and catchment management programs.

Sustainability Scoring: Assess both columns. If a column has more than one point, all criteria must be met for a score to be awarded. The aspect score is the lower of the two column assessments.

Score	Performance	Process
5	<ul style="list-style-type: none"> Comprehensive understanding of reservoir and downstream sedimentation and erosion issues and risks. Comprehensive understanding of stakeholder concerns. Maximum, practicable participation in catchment management planning and implementation. Strategies are supported by external stakeholders, including regulators. All objectives have been met or exceeded. 	Comprehensive risk management programs, by either the operator and/or other organisation, e.g., government agencies.
4	<ul style="list-style-type: none"> Good understanding of reservoir and downstream sedimentation and erosion issues and risks. Good understanding of stakeholder concerns. High level, practicable participation in catchment management planning and implementation Program of strategy implementation is largely supported by external stakeholders, including regulators. All objectives have been met or are on target to be met. 	Good risk management programs, by either the operator and/or other organisation, e.g., government agencies.
3	<ul style="list-style-type: none"> Adequate understanding of reservoir and downstream sedimentation and erosion issues and risks. Adequate understanding of stakeholder concerns. Adequate level, practicable participation in catchment management planning and implementation OR an inability to participate due to issues beyond the control of the scheme operator. Program of strategy implementation is only partially supported by external stakeholders, including regulators, or has minor levels of opposition. All major objectives have been met or are on target to be met. 	Adequate risk management programs, by either the operator and/or other organisation, e.g., government agencies.
2	<ul style="list-style-type: none"> Gaps in understanding of reservoir and downstream sedimentation and erosion issues and risks. Gaps in understanding of stakeholder concerns. Low level, practicable participation in catchment management planning and implementation. Low level of support for program of strategy implementation by external stakeholders, including regulators, or moderate level of opposition. Gaps in meeting objectives and/or gaps in the plans to meet objectives. 	Gaps in risk management programs, by either the operator and/or other organisation, e.g., government agencies.
1	<ul style="list-style-type: none"> Poor understanding of reservoir and downstream sedimentation and erosion issues and risks. Poor understanding of stakeholder concerns. Very limited, practicable participation in catchment management planning and implementation. Very low level of support for program of strategy implementation by external stakeholders, including regulators, or significant levels of opposition. Major gaps in meeting objectives and/or major gaps in the plans to meet objectives. 	Major gaps in risk management programs, by either the operator and/or other organisation, e.g., government agencies.
0	<ul style="list-style-type: none"> Very limited or no understanding of reservoir and downstream sedimentation and erosion issues and risks. Very limited or no understanding of stakeholder concerns. No practicable participation in catchment management planning and implementation. Major opposition to the scheme operations on the basis of its sedimentation and erosion performance. No objectives have been met. 	Absence of risk management programs, by either the operator and/or other organisation, e.g., government agencies.
Comments (attach additional pages if more space is required)		
Auditing Guidance Notes	Examples of Evidence	
	<ol style="list-style-type: none"> Sedimentation and erosion risk management program. Catchment management plans. Investigations into sedimentation and erosion issues in the reservoir and downstream. Specific operational rules, capital works, or catchment management programs to manage sedimentation and erosion risks. Performance reports on various risk management strategies. Stakeholder surveys and agreements. Interviews with regulators and stakeholders. Regulatory license requirements. 	

Copies of this document and information on the IHA's Sustainability Initiatives can be found at www.hydropower.org.

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